

Aviation News

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Culver's Model V: New features of the spinproof post-war Culver Aircraft Corp. two-place Model V are shown to advantage in this first flight picture. They include 85-hp. Continental fuel injection engine, electrically retractable tricycle landing gear, full wingflaps linked with stabilizer for automatic trimming, wing dihedral, and one-piece elevator. The Model V is a development of the pre-war Cadet and subsequent Culver radio-controlled target planes.

Guided Bombs, Giant Powerplants Unveiled at Wright

Deadly new air weapons forcefully demonstrate vital role of continuing U. S. aeronautical leadership in dawning era.....Page 7

Culver V Features Control Changes, Fuel Injection

Manufacturer claims post-war, two-place spinproof lightplane is fastest in world for given horsepower.....Page 15

ATA Move to End Air Delays Opposed Abroad

State Department experts see success of action to eliminate customs, visa, passport slowing of air travel in Western Hemisphere.....Page 50

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"Grass Roots" Airline Support Sought by ATA Unit

Lines designate 400 workers throughout nation to secure local backing of carriers' position on transportation policies, problems.....Page 43

Maryland Sets Liberal Policy for Intrastate Airlines

Public Service Commission grants franchises to three companies, including bus line, ordering beginning of service within six months....Page 36



FLASH!

These eight great airlines have purchased 103 majestic Lockheed Constellations to serve every major country on every continent:

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THE AVIATION NEWS

Washington Observer



PLANT SALES BASIS—Chances that the aircraft industry's ideas on plant disposal plans may be adopted by Surplus Property Administration and Reconstruction Finance Corp., appear brighter on the basis of the report on steel plants submitted to Congress by SPA. Cardinal plank of the steel plant policy bases price on prospective earnings, the same formula asked by the aircraft industry. Now, it develops that SPA is considering the same yardstick for all "problem plants," among which are aircraft facilities.

ORPHAN PLANES—Within a few months, orphaned surplus models are going to start troubling the Army and Navy. Many of these models, on which production has ceased—such as the Navy's Catalina—are due for several years of post-war use and they will need spares. Some manufacturers are reluctant to use up materials and space with tooling for these models and it may be that contributions will be the fate of many such craft. The Navy, which probably faces the most acute problem in regard to orphans, is taking steps to provide adequate spare parts for such planes as the Kingfisher, the two Catalina models, the TBM, and the PV-2. By this time next year there may be embarrassing shortages.

OVERSEAS SURPLUS—The three United States international air carriers, Pan American, TWA and American have been discussing purchase of surplus maintenance and communications equipment overseas with the Army-Navy Liquidation Commission's aviation division. Report is that the airlines will have to send their own men to the field commissions overseas and make their purchases there. AAE is said to have been blocking airlines and also ANLC, who have buyers for certain types of equipment such as hydraulic jacks and related equipment which the Army refuses to declare surplus on the ground they might

need it themselves sometime in the future. Airlines feel they need similar equipment to start giving service before foreign operations put in equipment in the field.

SURPLUS SLOW-UP—Add reasons for slow disposal of aviation surpluses. RFC recently announced it has about 1,500 Galloway radial diesel engines, originally designed for aircraft, on sale by competitive bid. However, before that course of disposal was adopted, a Texaco firm offered close to \$1,000,000 for the lot. RFC's board of directors took the offer under consideration. When the board did not act after several weeks, the prospective buyer withdrew the offer. Note: informed sources do not expect the total sale under competitive bidding to approach the original offer.

BY BID BASIS—It is expected, in informed quarters, that the Reconstruction Finance Corp. shortly will put the sale of surplus biplane trainers on a bid, rather than a price-tag basis. With less than 100 IT's sold out of more than 6,000 declared surplus, RFC seeks to determine whether the lack of sales is due to no demand, or to price. Disposal by bid should furnish an indication to the answer.

AIR REPORT—The report of the Interdepartmental Committee for the Demobilization of the Aircraft Industry, originally formed by the assistant secretaries for air of the War, Navy and Commerce departments, and now a subcommittee of the overall government Air Coordinating Committee, will shortly be submitted to Congressional committees concerned. It will set forth the programs measures that must be taken if the present requirements of a future mobilization are to be met.



All-metal Globe Swift, a pressing lightplane contender

RESEARCH RESULTS

Guided Bombs, Giant Powerplants Unveiled At Wright Field Exhibit

Deadly new air weapons fearfully demonstrate vital role of continuing U. S. aeronautical leadership in dawning era of possible scientific, total destruction.

By ALEXANDER MCSURELY

Necessity for continuing U. S. leadership in aeronautical research and development was brought home forcefully last week to members of the Senate and House, and the public generally, at Wright Field, Dayton, Ohio, where the Air Technical Service Command lifted the cloak of secrecy from some of its deadly new aerial weapons at the AAF's "Air Fair."

In a test show of exhibits from the various experimental laboratories of Wright Field which created a mile-long midway on the huge concrete apron of the flying field, laboratory specialists turned lecturers explained the operations of television bombs, huge new engines, jet propulsion, rockets, radar, and other developments of World War II.

► **Flight Show**—Meanwhile, overhead flew an all-inclusive AAF type "Armada," including the giant B-29, while their sister ships and many strange experimental aircraft, both American and captured from the enemy, were on display below.

Newly disclosed aerial weapons on display in the tents included ► The radio-control Aaan bomb, an ordinary bomb to which a radio-controlled fin was added. This bomb was first used in precision bombing to destroy the Aviano viaduct near Rome, to break the German supply line to that city. It was later used in Burma in early 1945, to destroy every bridge which was of strategic value to the Japanese. Bombardiers in combat usually released four Aaan bombs at once, picked the one which seemed best-aimed and by radio control headed it directly

Bridging the "V" brings a New Challenge to Aviation

THE Aviation Industry shares responsibility with Private Citizens, American Business and Government in making our nation the world's greatest peacetime air power. Only if we seek a peace that look forward to permanent Peace and National Security. For modern aviation has ended all thoughts that the United States is an island nation.

Under wartime necessity, the advancement of American Aviation was one of the great industrial missions of all times.

Now the challenge of peace provides an even greater stimulus to carry on the kind of scientific research, technical development and production methods that in a few short years made our air power a decisive force in the achievement of Victory.

For the aircraft of today and tomorrow should be used for the advancement of civilization, not for the destruction of mankind.

At Bell Aircraft our sights are aimed at putting into civilian service the same types of aeronautical skills

and achievements as were identified with the Armadas, the Kingbirds, the Bell-built B-29 Superfortress and the Atomsons—America's first jet propelled plane.

Bell Aircraft pledges to the Citizen, to Government and to American Business that we will intensify our research and scientific development programs. Soon we shall bring to them a new form of flying—the Bell Helicopter. "The Modern Magic Carpet" that offers door-to-door delivery, that can fly to and land in inaccessible spots reached by no other mode of travel... a helicopter with bellows, engineered stability. As in the past, now in the present, look to Bell Aircraft to be the creative practitioners of Aviation Progress.

*See "Applied Science" and "Progress Through Continuity"

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House of AAF Development: First aerial photograph of the \$150,000,000 Wright Field, Dayton, Ohio, headquarters of the Air Technical Service Command, as it has developed to meet wartime demands. Shown: 1. Office buildings, 2. Aeronautical museum, now

used for additional offices, 3. Aero-Medical Laboratory, 4. Wind tunnels, 5. Patterson Field, 6. Wright Field area "A", 7. Hangars and shops, 8. Aeronautical laboratory and range, 9. State test laboratory, 10. Flight test, 11. Equipment laboratory, 12. Offices

to the target. The other three bombs, responding to the same control, would follow the leader to hit the target also.

► The G2B-4 television glider bomb, which carries a ton of explosive and mounts a television trans-

mitter under its nose. It has small wings and a double tail. The television unit transmits to a screen in the plane from which the bomb has been dropped, showing the bombardier exactly where it is heading. He can correct its direction by radio control, for a 30-mile flight, while it is traveling at 360-mph, although its plane may be miles away, heading for home.

► The ROC high-angle television bomb which has a similar transmitter in its nose, a radio-controlled fin at the tail, and a strange-looking "loop" around its middle. The bombardier follows its movements on the screen, and may aim it at any angle necessary for a direct hit, by means of a stick control in the plane.

Combination of these or even more deadly long-range guided missiles, with an atomic bomb warhead would be the obvious future evolution of these weapons offering the prospect of total destruction of warring nations within a few hours.

Development of the guided missiles stemmed from the application of remote radio controls to small model planes used as targets for anti-aircraft practice.

Latest development in target planes, the Culver PQ-14, which cruises at 180-mph and is powered with a 135-hp Franklin engine, was displayed at the Air Fair in a fight from Columbus to Patterson Field. The successful flight ended in a crash, when the plane crumpled its nosewheel in a crosswind landing at Patterson Field.

► **Robot Fleet**—This demonstration offers possibilities of long-range future flights of fleets of robot bombers controlled by a mother plane, or by a panel at the home base. Obsolete four-engine bombers loaded with explosives were crash dived on enemy targets in Europe by radio control during World War II.

Percy-Palmer Laboratory display showed a number of lightweight undischarged reciprocating engines as well as displaying the General Electric Superjet engine which powers the Lockheed P-50, and other jet propulsion engines. The display included:

► Two big Lycoming experimental engines, one believed to be the most powerful reciprocating engine yet developed. This 34-cyl., radial, monster weighs 3,500-lb., and develops 3,600-hp. for takeoff. Designated XR-7753, the engine is designed for a plane not yet built. The second Lycoming, X145625, is a 12-cylinder flat engine weighing only 1,445-lb. and credited with 2,150-hp. at emergency rating.

► A 42-cylinder Wright liquid-

cooled engine, Model X 2160, designed for the experimental fighter XP-58, and rated at 2,490-hp.

► A 1,446-hp. Chrysler 16-cylinder aircraft engine, weighing 2,480-lb., designated Model X-12326-11.

► A display showing two Allison engines with long extension shafts turning a six-blade dual rotation propeller, similar to the installation in the Douglas "Xivestator" XH-42 and other Allison powered systems (Aviation News, Oct. 8).

► Displays of the leading Pratt & Whitney, Wright and Allison engines which powered most World War II warplanes.

Many interesting applications of radar were shown, among them a radar tailgun sight which enables a tail gunner to spot any enemy approaching from the rear long before he comes in sight, and to fix his guns on the plane. A motion picture explained the workings of GCA, the GCHQ Ground Control Approach system which used radar to enable planes to make blind landings in zero visibility, and which is expected by many experts to be a turn-of-the-century answer to the cumbersome approach systems now in use at commercial airports.

Most interesting experimental plane on exhibit was a tiny unmanned flying wing jet fighter which carried the pilot in a prone position with his head encased in the plastic nose, and a chart to make him more comfortable in flight. The plane had a towing connection on the nose and had



Giant Lycoming: Develops 3,600-hp. at takeoff, this monster Lycoming 34-cylinder radial engine weighs 3,500-lb. It was first shown to the public recently at the AAF's Air Fair at Wright Field. Believed to be the most powerful reciprocating engine for aircraft yet produced, the Lycoming XR7753 is designed for a plane which has not yet been completed. Its use may be gauged by comparison with the officer, Lt. S. M. Kaufman, Boston, standing beside it.

been towed to determine its flight characteristics before it was cut loose on its own. No performance data on this plane was made available.

► **Nose Throat**—Highlight of the latest equipment display was the Buehler RP-36 Natter (Viper), a German plane which was launched vertically from a rocket platform to a 36,000-ft. altitude after firing its 24 rockets at the entry

the plane is designed to break in two, with a parachute lowering the expensive engine to the ground for recovery, while the pilot also parachutes.

New Construction Materials Studied

A wide range of research projects on wood and plastics as well as other aircraft materials, improved aircraft structures and numerous projects associated with high-speed airplanes are being carried out at the Research Laboratory of the Curtiss-Wright airplane division at Buffalo.

The Subcommittee on Wood and Plastics for Aircraft of the National Advisory Committee for Aeronautics held a two-day meeting at the laboratory last week. Dr. C. C. Furness, director of research, was host.

► **Test Cells**—The equipment of this aeronautical laboratory includes a new high-speed wind tunnel, soon to be placed in operation, and a special test chamber in which the atmospheric conditions of high altitudes can be closely simulated.

Although light metals are the currently predominant materials used in airplane manufacture,



particularly for large and high-performance aircraft, research on wood and plastic for aircraft is being vigorously pursued in many laboratories. A large amount of research in this field is being sponsored by NACA.

Considerable time was devoted at the Buffalo meeting to so-called "sandwich constructions," which is reported to build out pressure for all types of aircraft, including high performance models. Sandwich materials are so named because they consist of thin-pipe "cores" of high-strength material, bonded by a special synthetic material adhesive to a considerably thicker, low-density core material.

Even Glass—Super-thin sheets of steel, aluminum, or even high strength glass fabric may be used as faces bonded to such low density material as balsa wood or a foamed plastic. Some engineers believe the inherent rigidity and strength of such materials could conceivably lead to construction of aircraft without the internal supporting members which limit space and account for much of the weight of aircraft as now built.

As experimental airplane fuselages have been constructed of plastic sandwich materials which is 67 percent stronger, with almost the same weight, thus a similar savings of metal construction.

Lodwick Honored For AAF Work

One of the few times the award has been made to a civilian, the Bronze Star has been bestowed by the AAF on Albert J. Lodwick, president of the Lodwick School of Aeronautics, Lakeland, Fla. The citation credited Lodwick with suggestions resulting in "many technical developments and improvements in production of his overseas trips as a member of special consultant missions for the AAF."

Long one of the country's leading aircraft service operators, Lodwick trained many Army aviators during the war as his sole addition to his contribution as a consultant. In the latter capacity, he traveled some 81,000 miles in 1943, 1944 and 1945, and visited all fronts where American troops were active.

Star-Scholar—Award was made at AAF headquarters in the Pen-



"Meritorious Civilian": Lt. Gen. James H. Doolittle talks the Bronze Star medal on Albert J. Lodwick, president of Lodwick School of Aeronautics, Lakeland, Fla., as reward for meritorious service overseas as special technical consultant for the Army Air Force.

tagon by Lt. Gen. James H. Doolittle, whose Eighth Air Force was a major recipient of Lodwick's advice. Present at the ceremony were Lt. Gen. Ira Eaker, deputy AAF commander, and Maj. Gen. C. C. Chaney, Edward M. Powers, Laurence Norstad, and Brig. Gen. William M. Walsh.

RFC Components Post Resigned By Peterka

Li Col. A. E. R. Peterka has resigned as chief of the aircraft components section of the office of surplus property of the Reconstruction Finance Corp., effective Oct. 31. He is being succeeded by Col. George T. Mearns, formerly of Wright Field.

Col. Peterka will remain the manufacturing firm of Lamm and Sessons, Cleveland, Ohio. Before assuming his duties at RFC last April, he was in the AAF for three years. He originated the plan for redistribution of aircraft parts and components which evolved into the Aircraft Scheduling Unit.

Before entering the Army, Col. Mearns was in the automobile manufacturing business. Stationed at Wright Field for four and one-half years, he was in charge of allocation and control of all new materials, machine tools plants and manufacturing equipment. He supervised the setting up of plants built for the aircraft industry.

New Non-Scheduled Dates Are Set

Civil Aeronautics Board has set an oral argument for Nov. 26 on the subject of proposed economic regulation of non-scheduled air services, and has extended until Jan. 31, the date for receiving comments from the industry on proposed safety regulation. Part 42 of the Civil Air Regulations.

All persons intending to participate in the oral proceeding should advise Francis W. Brown, CAB's chief examiner, by Nov. 8. "The communication should set forth the name of the person who will argue, the party or group of parties whom he will represent, and the amount of time desired for presentation. Brown announced, "It will be of considerable assistance to the Board if individuals with a common interest in this proceeding can arrange to present their argument through one representative. As soon after Nov. 8 as possible all parties will be advised of the names of the persons who will argue and the time allotted."

Subject Stressed—It was emphasized that the argument will relate only to proposed economic regulation. A date has not been set for oral discussion of the safety regulations. In granting more time for the industry to forward its comments on these proposals,

the Board anticipates aid from various regional and national meetings to be held in the next three months.

State Control Seen For Airport Funds

Congressional action seen stage for final decision and passage of construction program.

State governments which have waged a hard fight to obtain complete control over federal expenditures for airport development appeared assured of an unequalled victory in Congress last week.

Following lead of the Senate, the House adopted an amendment to the \$1,300,000,000 Air Act bill requiring that all federal outlays for airport construction shall be funneled through state governments. The vote on the amendment was 135 to 129.

Field Difference—The House amendment places the airport program, without qualification on a federal-state basis. It omitted the stipulation contained in the Senate-passed airport bill, which would require state governments to use 60 percent of federal funds on small flying fields and 15 percent on commercial transport fields.

The House appeared set to approve the Lee airport measure late

last week following overwhelming rejection of an amendment to kill the bill.

Differences in the Lee bill and the Senate-passed McCarran airport bill would then have to be ironed out by a joint conference committee of the two chambers.

Two Issues—One of the major issues in the airport program, which will have to be decided on government, is the size of the program. The Senate trimmed the program proposed in the McCarran bill down to a total of \$750,000,000. The House, however, voted last week to retain the \$1,300,000,000 airport program contemplated in the Lee bill.

Under the Senate-passed bill, state governments would be required to match federal expenditures of \$10,000,000 annually on a 50-50 basis over a five-year period.

Ten-Year Plan—The Lee bill would extend the program over a ten-year period, involving a total of \$1,300,000,000. An amendment offered by Rep. Carlson, (R-Kans.), to cut the airport program from a total of \$1,300,000,000 to \$1,000,000,000 was rejected by the House 166 to 60.

Surplus Airfield Disposal Readied

With the trend of thinking now swinging toward placing disposal of surplus airfields with the real estate division of the Reconstruction Finance Corp., work on the regulation setting forth policy for disposition of the fields is nearly complete.

Comments on the initial draft have been received from the Army and Navy, and the date for release of the regulation is set for the end of the month.

Gift Clause—Largely the barometer of the Department of War, which favors gratis distribution of government property, the airfield regulation will make possible the release of surplus fields to states, counties or municipalities for "valuable considerations to the government other than cash payment."

In plain language, this is explained as meaning that the fields can be turned over to non-federal parties upon payment of a fee, and that they will be available

for government use in an emergency. Payments would also warrant to maintain the fields properly.

The proposal roughly parallels the bill of Sen. Reuben McDonald (Calif.) introduced as an amendment to the surplus act to make possible grants of fields to states, counties and municipalities.

Meanwhile, following the action of the Navy several weeks ago in announcing the bid of \$100,000 for release of 100 surplus airfields, the Navy last week disclosed its own bid.

New Contracts—However, the \$100,000 bid was not the only one received and long-term bases, training installations and other fields listed as being retained by the AAF had no bids. The full report of the Navy's own bid was arrived at after two months of study, AAF disclosed, and confirmation is outstanding on other fields.



RADAR "TREE":

Camouflaged to resemble a tree, this radar installation near Stuttgart is used by the Luftwaffe to detect approach of Allied aircraft. Discovered by air disarmament specialists as part of the North Air Force program to neutralize facilities of the Luftwaffe, this latrine-like contrivance illustrates marked differences in appearance from the more compact American designs.

Airpower Taxation Approved In Poll

A survey made by Brown and Benson, Princeton, N. J., indicates that a majority of the American public now quite desires police national security in the air, but is willing to pay extra taxes to achieve it.

The survey, released through the Aircraft Industries Association, shows that 91 percent of those questioned, desire post-war air security, seven percent do not, while two percent have no opinion on the subject.

Week's Earning—When this group was asked "would you be willing to pay a tax equal to a week's earning to maintain a strong air force," the response was 67 percent yes, and 29 percent no, while seven percent apportioned an air force and four percent were undecided and two percent had no opinion.

So far as the product of the American aircraft manufacturing industry is concerned, 81 percent held that the United States makes the best airplanes, three percent held that the best airplanes were made in Germany, two percent in England and one percent in Russia, while three percent had no opinion. The survey did not indicate the number questioned.

NPA Report Backs Industry In Urging Full Air Production

Planning Association includes significant emphasis of non-scheduled and private flying potential; asks subsidized pilot training; manufacturing termed vital reservoir of military, commercial strength.

By SCOTT HERSEY

A strong aircraft manufacturing industry is an absolute prerequisite to the proper functioning of the other two interrelated elements of war aviation—military air force and civilian air commerce—in the opinion of the Advisory Committee to the Aircraft Industry of the National Planning Association.

The committee, in its just-issued report, says that the aircraft manufacturing industry is the reservoir from which the strength of the other two elements is drawn and raises the question as to what extent the aircraft industry will continue to be a main-

tenance industry, to what extent it will produce for commercial use and, finally, what proportion of its present capacity will be neither military nor commercial production.

Wac Shuts.—The industry, before the war, was about 81 percent a military industry, the percentage of its output going to the armed forces. During the war, of course, it was 100 percent a military industry.

The committee feels that on the military side the industry should maintain production at a rate sufficient not only to maintain a high level of research and development and to supply the air forces with the best airplanes by way of current production, but also to make it possible rapidly to expand production which would be necessary to meet emergency requirements of international obligations and national defense.

On the civil side, the committee believes that we should strive for the greatest development of air commerce in order that as much of our material aircraft manufacturing industry as possible may be supported from this economically useful source.

Best Fields.—The committee's report noted significantly that non-scheduled commercial and private flying offer an even greater potential for expansion than scheduled air transportation.

For this reason, the report says, should be accomplished by measures calculated especially to improve the safety and utility of the smaller airplane. By urging the committee explained it means a combination of economy, reliability, and convenience of use.

Recommendations were made that the federal government should make provision of a large number of effective, planned and located airports, together with airways improvements, navigation facilities, and traffic control; make provision for research and experimentation with respect to the



NEW FAA DIRECTOR:

Joseph J. Mitchell, Jr., has been named executive director of the Federal Aviation Administration to replace Don V. Sorensen, who has accepted a position with National Aeronautics Association. Mitchell, former treasurer of FAA, takes over the association office in Washington after having been manager of Hawthorne Aircraft and director of bare operations of the Hawthorne aviation organization. He has had charge of all Hawthorne activities in the Corvallis, Oregon, area since 1945. Mitchell previously was a specialist in private flying and served as second region superintendent of CAA's War Training Service.

smaller types of airplanes, especially new types of unconventional design, and their accessories.

In addition, the committee believes there should be a relaxation of economic regulation of unscheduled flying, as well as the elimination of unnecessary technical regulation not contributing to safety.

Pilot Plan.—The report recommends that proper action be taken to ensure that a substantial number of young men and women learn to fly each year, through a Civilian Pilot Training Program for college-age youths, sponsored by the Civil Aeronautics Administration. The program, the committee believes, should provide federal subsidization of part of the cost of flight instruction necessary for private pilot certification.

The work of stimulating interest in aviation through encouragement, guidance and technical assistance should extend through all levels of education, in addition.

A research and development

program should be carried on, the committee says, at a rate which will assure our continued technological and industrial leadership in the field of fundamental research, where the object is the attainment of basic knowledge not limited in its applicability to any specific project, the committee believes government-financed research should continue to be carried out by the National Advisory Committee for Aeronautics. In applied research and development, where competitive excellence in applying principles to particular objects or problems is at the first import, the committee holds that industry should take the lead.

PT, Cessna Prices To Be Lowered

New "boom" prices for surplus primary trainers and Cessnas, are expected to be set shortly by the Reconstruction Finance Corp., disposal agency for surplus aircraft.

The revised rules, implementing the changed market, will set prices for surplus trainers and Cessnas (AVIATION NEWS, Sept. 17), are believed to reflect the old ceiling prices of \$3,600 on PT's and \$5,800 on Cessnas. Lowest price on PT's, however, will now be \$300 in place of \$375.

RFC is studying closely the changes in regulations governing all surplus sales to veterans, to determine the effect on aircraft disposal. Initial reaction is that there will be little effect, although the elimination of the \$2,500 limit on purchases may result in more ex-survivors entering business as aircraft service operators.

While dropping the floor for Cessnas from \$3,900 to \$2,400, RFC is expected to establish separate floors for Cessnas on condition for the different models of these aircraft.

Models with heavy wing (\$3,900-Bas gross weight), constant speed propellers, probably will be tagged at \$2,500 when in above average condition; \$7,750 when in average condition; and \$7,900 in below average condition.

Cessnas with heavy wing, wooden propellers, 100-hp will sell for \$3,000; \$4,350 and \$5,550 according to the three grades of condition. Planes with light wing (5,100-lb gross weight), constant speed propellers, will range from \$4,500 to \$5,750, to \$5,900. These with light

WPB End

No change in the present handling of surplus by WPB is expected, when the War Relocation Authority goes over to the new Civil Production Administration on Nov. 3. Since liquidation of the aviation division of WPB, many surplus assets have been for maintenance and repair of military equipment. This has all continued under the direction of William B. Hoek, chief of the foreign and aviation sections of the Special Buying Division.

wing, wooden propeller, and in above average condition will be priced at \$3,600. All others of that description will go for \$3,400.

In addition to the revised price scales, two other recent developments are expected to figure strongly in the clearing out of the tremendous stockpile of surplus craft on hand. The first is the ever-growing volume of combat aircraft being scrapped by RFC. The AAF is fitting a peak of 600 planes and as few daily to RFC scrap centers.

The second is the surprising response to the educational program under which aircraft are sold to schools and colleges, for non-flying use, at very low prices. To

date, total disposals in the category are 150 — 16 bombers, 60 fighters, 100 trainers and seven gliders.

School Rush.—There has been a rush of inquiries from educational institutions in recent weeks with a considerable number of requests now in regulation—W. K.

Four Air Firms Change Top Posts

Last executive appointments, resignations issued by Northrup, TACA-Keller, Aerotec, vice-presidential shifts prominent.

Vice-presidential appointments and resignations in the aviation industry highlighted late personnel news this week.

Resignation.—Celestin, vice-president of Northrup Aircraft, Inc., has resigned to organize and head a South American importing and exporting business with headquarters in San Paulo, Brazil. He will retain his membership on the Northrup board of directors, however, and will represent the Northrup Company in South America.

His resignation was accepted at a board meeting during which several executive promotions were voted. Robert H. Evans, Jr., indus-

Complete Automatic Flight Revealed

"Push-button" flying, long feared by some enthusiasts as possible for the general run, is now a fact. New through-war-proven devices revealed by the Hawthorne-Hershey Repliator Co. have exhibited in New York is the first new electronic gadget which, Russell H. Wernper, sales manager of the company's Hawthorne division, says, requires a pilot to be flown in his destination without the necessity of a flight crew's touching the controls.

Flight Landing.—Weighing 60 lbs., the autopilot contains pilot in facilities in that an airplane can "land" to a radio beam. The device contains three small meters, gyroscopes and a control panel. Additional instruments control the autopilot, making possible blind landings without human touch on the controls.

Wernper said it is practical to equip an aircraft with push-button mechanism and into the automatic radio-direction device, with each button turned to a different effect. After takeoff, the pilot can push the proper button for a point 300 miles away and the device will fly the plane directly to the destination.

Wernper pointed out that while these and other war-born electronic ideas find flying simpler, more economical and safer for pilots, they also have been widely developed especially for the use of the passenger and private flyer.

Wernper.—The other electronic systems are cabin temperature control; "formation work," making possible one-hand control of aircraft through the electronic pilot; engine temperature control; a gasoline gauge; a radio; an artificial horizon; a compass; a heading indicator; a switch which can regulate movement through or around that 11-m depending on the height of the aircraft; a device for out of dust in the air, a device to control gasoline flow from various fuel tanks.

pilot's passenger, oil, chutes, and essential flight instruments.

► Elimination of the carburetor being threatened by the fuel injection system in the powerplant.

► Factory built-in provision for two-way radio.

► Individually adjustable seats with rubber Airframe cushions.

► Larger and wider cabin.

► Larger landing gear wheels (eliminating the most criticized feature of the pre-war Calver) and a "soft landing gear."

The new Calver Model V has been flying for some time at the Wichita plant and demonstrations of the new type will be placed in the hands of dealers soon after Jan. 1—A. McE.

Civilian Air Schools End AAF Program

The program under which civilian flight schools trained military aviators for the AAF was closed last season, ended last week with the graduation of the final class from Hawthorne School of Aeronautics, Grangeburg, S. C.

While the exact number of cadets given primary training under the program has not been announced by the Army, the total is estimated at 230,000 by Wayne Wadsworth, secretary of the Aeronautical Training Society, the organization representing the 84 schools engaged in the work.

► **Ending**—Last students to fly at the contract schools were French pilots at the Grangeburg base British training ended last month, and the last AAF school closed August 4.

In the five years of the program, ATS schools:

► Increased the pilot production rate from 500 to 110,000 a year.

► Saved, at a conservative estimate, \$250,000,000 a year, based on what it would have cost the AAF to expand its own facilities to achieve that rate.

► Attained a safety record of only one fatal accident for every 43,230 hours of primary flight, which is about equal to 6,322,000 miles of flying.

The contract school program was launched in 1928 when the AAF was the Army Air Corps, and is only primary training cadets here. Randolph Field, Texas—capacity, 390 pilots a year.

Since the barnstorming days of the twenties, the veterans of aviation had been conducting their own flying schools and charter op-

CAP Funds

Appropriation of \$214,000 of state funds for support of the California State Wing of Civil Air Patrol for the next two years has been approved by Earl Warren, governor of California. Disbursement of the funds will be supervised by the State Department of Education. Colorado and Wyoming also are expected to make bilateral CAP contributions of \$30,000 and \$15,000 respectively.

rations, some doing well, most operating on a marginal basis. These were the men called upon when the Army saw the need to expand its aviation arm. According to one account, they gained completely, were given no contracts, no guarantee of payment—because the Air Corps did not have the authority for the funds to make the venture official.

► **Narrow Margin**—The school operators paid their own expenses, some borrowed. When an appropriation was finally obtained from Congress, it was by two votes.

UPMA Representative Named For Air Parley

James W. Batchelor, Washington attorney and aviation legal consultant, is representing United Pilots & Mechanics Association at the Provisional International Civil Aviation Organization meeting which opened Oct. 15 at Montreal, Canada.

The association will offer recommendations for simplification of regulations, elimination of "red tape" and removal of international barriers to free transit of private and non-military planes between nations. The association is urging the importance of permitting the fullest development of private flying internationally, by avoiding complicated rules and over-rigid pilot standards. A minimum of international regulations consistent with public safety is urged also.

Exhibit Invitation

Invitations to all manufacturers of general aviation to exhibit their post-war models at the opening of Oakland (Calif.) Municipal airport to civilian flying, sometime next spring, is being extended by the Oakland Chamber of Commerce. The airport has been in

military use for the last three and one-half years, and exact date of the private flying show will be determined by the date the field is released by military authorities.

PENALTIES

Ten Lose Licenses For CAR Offenses

Fraudulent altering of Accrual Rating Record and flying while under the influence of intoxicating liquor are two of the violations of Civil Air Regulations which prompted the Civil Aeronautics Board to revoke pilot certificates of four aviators, recently, and suspended six others.

Summary of the violations and Board actions follow:

REVOCATIONS

Donald Earl Rogers, private pilot, had been a member of the board of directors of the United States Civil Air Patrol and had served on the flight status committee. He was found guilty of falsifying his Accrual Rating Record to indicate that he was the holder of a valid pilot certificate, and entering various amounts when he had not passed the required ground school examination. He had CAR number 10-111 and 10-112. Certificate revoked.

Henry Alexander Dwyer, commercial pilot, had been a member of the board of directors of the United States Civil Air Patrol and had served on the flight status committee. He was found guilty of falsifying his Accrual Rating Record to indicate that he was the holder of a valid pilot certificate, and entering various amounts when he had not passed the required ground school examination. He had CAR number 10-111 and 10-112. Certificate revoked.

Donald Beverly Stinson, private pilot, had been a member of the board of directors of the United States Civil Air Patrol and had served on the flight status committee. He was found guilty of falsifying his Accrual Rating Record to indicate that he was the holder of a valid pilot certificate, and entering various amounts when he had not passed the required ground school examination. He had CAR number 10-111 and 10-112. Certificate revoked.

Clayton Jackson Rogers, private pilot, had been a member of the board of directors of the United States Civil Air Patrol and had served on the flight status committee. He was found guilty of falsifying his Accrual Rating Record to indicate that he was the holder of a valid pilot certificate, and entering various amounts when he had not passed the required ground school examination. He had CAR number 10-111 and 10-112. Certificate revoked.

SUSPENSIONS

Joseph H. Haines, student pilot, had been a member of the board of directors of the United States Civil Air Patrol and had served on the flight status committee. He was found guilty of falsifying his Accrual Rating Record to indicate that he was the holder of a valid pilot certificate, and entering various amounts when he had not passed the required ground school examination. He had CAR number 10-111 and 10-112. Certificate suspended.

One student pilot flying at his first flight, had been a member of the board of directors of the United States Civil Air Patrol and had served on the flight status committee. He was found guilty of falsifying his Accrual Rating Record to indicate that he was the holder of a valid pilot certificate, and entering various amounts when he had not passed the required ground school examination. He had CAR number 10-111 and 10-112. Certificate suspended.

Edly French Chapman, in the vicinity of Night, Michigan, was, after 11:00 p.m., found flying a Cessna, the violation of CAR number 10-111. Certificate suspended.

Samuel E. French, in the vicinity of Night, Michigan, was, after 11:00 p.m., found flying a Cessna, the violation of CAR number 10-111. Certificate suspended.

John F. French, in the vicinity of Night, Michigan, was, after 11:00 p.m., found flying a Cessna, the violation of CAR number 10-111. Certificate suspended.

For a full and complete list of penalties for violations of regulations, consulting of a book when he was not wearing a seat belt, was found guilty of falsifying his Accrual Rating Record to indicate that he was the holder of a valid pilot certificate, and entering various amounts when he had not passed the required ground school examination. He had CAR number 10-111 and 10-112. Certificate suspended.

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Sales Staff Rise

Organization of distributor-dealer units by the leading personal plane manufacturers, is crystallizing into a set-up far beyond the number of subsidiaries existing for the same companies in pre-war years. The pre-war "big three" companies in light-plane sales, Piper, Taylorcraft and Aeromarine, now have approximately 68 distributors apiece. Besides these, Piper and Aeromarine each have close to 500 dealers while Taylorcraft has more than 700, and may increase this number.

Picture simulated by Island. From the left, way, and economically utilized with an alloy metal. Airframe retained steel with aluminum and 14-18. Outboard mounted for its engine.

Tuna Fleet Plane Opens New Fields

Use of the Republic Sea Bee amphibian as a scout plane for the San Diego, Calif. tuna fleet is being watched with interest by the fishing industry as the possible opening of a new field for small seaplanes and amphibians.

The four-place Sea Bee was ordered on the big new tuna boat, Pan-American, skippered by M. M. Holmes and owned by Anthony Martinovich, who also designed and built the motor clipper. Largest of the tuna fleet, the Pan-American is big enough to carry a small seaplane without trouble. The Sea Bee is in service from a land base in Costa Rica, scouting the Central American waters for schools of tuna, and will direct the fleet to the best fishing areas by radio.

► **Original**—While small fleet planes have been used by warships for many years as scouting planes, it is believed that this is one of the first instances of a scout plane used with a fishing fleet.

Rotor Glider Shown

A rotary-wing glider, with possible sport flying applications, which operates on the principle of autorotation of two blades without power in a descending flight, is under experimental test at Wright Field. Shown to the public for the first time at the AAF "Air Fair," the entire device weighs only 30-lbs., is designed to carry a load of 340-lbs. to a landing.

Developed as a mechanical par-

Briefing For Private Flyers and Non-Scheduled Aviation

First use of a helicopter for a "front dispersal" experiment is scheduled at Michigan State College, East Lansing, within the next few days. A. W. Farrell, head of the agricultural engineering department, has arranged to have an AAF helicopter flown to the college experimental farm from Wright Field for the tests. Temperature readings show that the air is usually from 5 to 10 degrees warmer at about 25-ft. above the ground than at ground level during "cold snaps." The Michigan agricultural experts anticipate the whirling helicopter blades may fan the warmer air down to the ground thus preventing frost on the college orchards and meek farm.

NEW INDIANAPOLIS HAYEN—New haven for the private flyer is the Indianapolis area will be Brightwood Airport, 200 acres field only 3.7 miles from the well-known center of the Hoosier capital, Monument Circle. Not yet still, the airport will have regular city bus and trolley service. The fourth private airport to serve Indianapolis, Brightwood airport was approved by the county planning commission only after a lengthy fight and over the protests of neighboring landowners. A trio of businessmen, Eyer, Williams and Miller Barker and Jerry Kosch, will operate the field, with Mrs. Esther Latham, grand school instructor and private flyer, as manager. Approved plans call for 4,000-ft. and runways, so that the field will be useable by fairly large planes, and may eventually be used by feeder airlines as a convenient terminal with public transportation to downtown Indianapolis.

MORE WORK FOR FBI—Amendment to the Dyer motor-theft law, which has now become effective, makes interstate transportation of stolen automobiles a federal offense. The amendment sponsored by Senator Pat McCarran, and recently signed by President Truman, gives the Federal Bureau of Investigation and other federal enforcement officials authority to arrest and prosecute anyone who flies a stolen plane over a state line. The motor-theft act has been the most effective method of breaking up "hot-car rings" which used to take a heavy toll of automobiles. And now that personal planes are expected to become "a big business," most aviation people agree that similar protection for the private plane owner is well worth having.

TAYLORCRAFT SALES PLAN—Taylorcraft aviation division of Detroit Air-Craft Products, has announced completion of arrangements for a special sales training program for its distributors and dealers, under supervision of O. M. Bell, sales manager. The course is in many respects similar to those previously announced by the other two largest helicopter manufacturers, Aeromarine and Piper, since all three courses are designed by the Aviation Institute of Professional Sales Training for a 24 weeks correspondence school program. Supplementary training sessions are planned by Taylorcraft at the factory and at dealer meetings in all parts of the country during the next few months. Importance of adequate salesmanship training is emphasized by Taylorcraft, because of the keen competition which is to be expected in personal plane sales as soon as the first post-war demand is satisfied and the sellers' market becomes a buyers' market.

IDAHO TOURIST AIRPARK—At Thousand Springs Airpark, Hagerman, Idaho, extensive accommodations for air tourists are being constructed by Delbert Champitt, owner of the new field. These include tourist cabins, a lodge building, including a ballroom, and dining room with 400-person capacity, cocktail lounge, game rooms, 34-hour service club shop, swimming pool, tennis court, riding academy, motor cruiser ride on Snake River and rental boats for fishing and duck hunting. The airpark, located in Snake River Canyon, will have a 4,500-ft. main runway, tender block hanger with showrooms, shops, parts department, and A & E mechanics and flight instructors. Landline Stevens, aerial target buster, has been named manager of the facility.

—Alexander McDermott

achute to land personnel and equipment sits on a bicycle seat, supplies behind enemy lines, the device's direction by Rotocopter is launched from a vertical and horizontal control transport plane in flight. The co-



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Lightplane Control Techniques Loom As Critical Sales Point

Simplified versus conventional control question provides previously minimized marketing controversy; concessions to new methods becoming apparent; public defense of orthodox systems undertaken by Piper.

By KARL HESS

Lightplane control systems, simplified or conventional, promise to provide a highly contested selling point in the peacetime personal aviation market, although concessions to the simplified technique are apparent.

What appeared to be a definite step toward public airing of this phase of lightplane design came recently when Piper Aircraft stressed the utility of its Cub trainer on the basis of conventional controls that would allow "slipping" into tight landing areas.

► **Cross Central**—The fact that the Cub's controls, like those of all conventional planes, could be cranked—rudder pedals and stick reversed laterally—was pointed to as an extra margin of safety not found, it was maintained, in simplified control aircraft where the rudder control is automatically coordinated with the aileron control for elimination of the pedals.

Performance reports of the Ercoupe, most published and one of the two simplified control planes now listed as flying, raise an immediate defense, however. (The second simplified craft, developed by General Aircraft as the G1-89 Skyfiver, is set to be produced by Le Mars Aircraft at the Skycope.)

First defense centers on the triple landing gear featured by the Ercoupe and allowing greater braking to halt tight, steep landings. The plane has been reported, by one pilot, to have sustained a 90-mpg landing without damage and without excessive roll, pitching forward on the front wheel also sustained a landing even as would a tail-wheel plane under such brake pressure.

► **Mesh Vs. Slip**—Armed squarely at the landing feature claimed by the conventional control craft, the Ercoupe's aerodynamic design provides a little publicized, but tested method of emergency or "light" approach. At what would amount to full-stall stick position on a conventional plane, the Ercoupe "meshes" downward at an

acute angle but without building up great speed. This almost vertical meshing effect has been termed, by some users, equal and superior to the older slipping method of "getting in tight." Usually it seems it would provide, at least, a practical emergency substitute for the slip.

► One "dark horse" possibility in the control field is a simplified system proposed by Clever for its post-war personal plane. Company officials have stated the technique employed will allow the beginner to fly safely in a shorter time than usual, but hinted it would not be polished after the system employed in the Ercoupe. (See Calver story, Page 14, this issue).

Main conclusion of an orthodox control manufacturer to the simplified control is that of Aerovox, now inclined to use the Ercoupe

patent. One of the largest light-plane builders, Aerovox's move toward the new technique is perhaps just the first of many such moves by other companies.

► Another simplified control model reportedly headed for the peacetime market is the Kaiser-Hammond pusher, twin-boom light-plane where rudder pedals are eliminated by a system described as different from the Ercoupe plan.

► Following the death of General's Skyfiver, production to Le Mars, General is planning expanded production of "other models" of the simplified control plane at a Tennessee plant.

► Further afield than any of these is the "great unknown" of control techniques as advocated by George Spratt, Coevair engineering executive, in his "movable wing" experiments. Spratt has asserted he is aiming at even further simplification of controls than those incorporated in the rudder-aileron planes with only two basic control movements. Ideal, according to Spratt, would be a single control movement, adjusting ascent and descent by use of speed changes alone. He reports accomplishing this in one of his first experimental models, and thereby provides another stepping stone in the "where do we go from here" path of lightplane development.

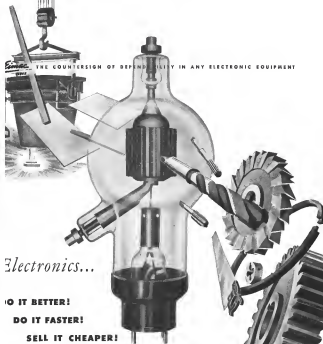
Lightplane Trips Beat Airline Time

Savings in time by flying in private plane rather than in an airliner are possible if the private plane used is of a type suitable for cross-country flying and not mere airport hopping. C. S. Robinson, operator of Bendix Airport, Teaneck, N. J., declares:

Citing figures from his own experience, from a Fairchild 14 from New York to Washington, as against trip he has made by

air and by train, on scheduled commercial carriers, he reports the following time analysis, showing comparative times of 3 hours, 35 minutes, for the private plane, 3 hours, 18 minutes, by airliner, and 4 hours, 55 minutes, by train, each representing time consumed from his office in New York to his hotel room in Washington.

PRIVATE PLANE	TRANSPORT PLANE	TRAIN
To airport—55 mins.	To city ticket office—10 mins.	To the station—15 mins.
At field—38 mins.	At city ticket office—45 mins.	At station—15 mins.
Flight to Wash.—1 hr. & 40 mins.	To airport—25 mins.	Train time—4 hrs.
At Wash. Airport—10 mins.	At airport—35 mins.	
Cab to hotel—10 mins.	Flight to Wash.—1 hr. & 40 mins.	At Washington station—15 mins.
	At Wash. Airport—25 mins.	To hotel—10 mins.
	To hotel—35 mins.	
TOTAL: 3 hrs., 38 mins.	TOTAL: 3 hrs., 18 mins.	TOTAL: 4 hrs., 55 mins.



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PRODUCTION

Plea For Government Policy Outlines East Coast Planning

Bell, United stress helicopters; C-W, Martin stress military order need; Fairchild sees "new" industry; Grumman, Republic list other projects during testimony before Senate subcommittee.

Crystallization of peacetime plans among East Coast aircraft manufacturers awaits to a considerable degree a definite Administration aviation policy and the setting up of a clearly understood military program of procurement, research and development.

This was plain in the testimony of leading East Coast aviation executives before a Senate subcommittee at which a host of aviation programs was given.

► **Bell**—J. D. Bell, president of Bell Aircraft, and his company was convinced that the utility of the helicopter is so high that it will ultimately prove to be the basis for an entire new air industry. He said the company was so impressed with the successful flight characteristics of their experimental helicopters that Bell's board of directors has authorized the production of a substantial number. The new helicopters now designed range in power from 150 to 500 horsepower and are suitable for a wide variety of commercial, industrial and military uses.

The company's work in the military aircraft field is now primarily concerned with experimental and development work. Bell said the company has always placed special emphasis on research and developmental aviation and there is no inclination to alter this procedure. He said the company was engaged in several projects which call for the development and operation of high speed unconventional aircraft.

► **United**—H. M. Horner, president of United Aircraft Corp., said his company plans to "aggressively pursue commercial markets for engines, propellers and helicopters, domestically and abroad." He added that United does not plan to enter any fields other than aircraft at this time.

► **C-W**—G. W. Vaughan, president

of Curtin-Wright, reported that his company will complete delivery of all remaining military production except for some spares and certain experimental contracts this month. Curtin-Wright has approximately 25,000 employees on the payroll today compared with 137,000 on VJ Day. Of the 25,000, about 10,000 are engaged on termination while a substantial percentage of the others are on assembly operations, a large part of which will be completed by the end of this month.

Curtin-Wright has a small amount of commercial orders but Vaughan said no matter how successful the company is in increasing these, they must rely heavily on military orders for some years to come if they are to maintain a nuclear structure sufficiently strong and sufficiently skilled to supply the Air Force with advanced types of aircraft and other devices.

Vaughan said Curtin-Wright is definitely interested in the development of products either related to or wholly unrelated to the aircraft industry and had devoted considerable time and effort recently to the study of dozens of products which fall within this category.

► **Fairchild**—J. Carlson Ward, Jr., head of Fairchild, looking to the future said the Duxoroid division is ready to start employment with plans to continue basic Duxoroid research which has applied to war products and which now can be shaped into the needs of the post-war military branches in addition to new uses for peacetime products. In this manner, he added, they hope to create a new industry that did not exist before the war.

► **Ranges**—The Ranger Engine Division, he explained, presents a problem that is large and complicated since no current demand exists for the specialized military



LIGHTWEIGHT RECEIVER:

First post-war aircraft radio receiver of the Ranger Aircraft Radio division of Electronic Specialty Co., is this Model 117 weighing 1-1/2, 12 ounces. A five-tube superheterodyne with automatic volume control, it operates on batteries. The entire unit is a three and three-quarters inch cube and the receiver may be mounted anywhere on the instrument panel through a three-inch hole. Battery pack measures 2 1/2-in. square by 8 1/2-in. deep.

engines that were developed. Financing that approximately five years is required for a new engine to be perfected and that no immediate solution is in sight for this specialized field of activity, attempts have been made by Ranges to procure suitable contracts as a sub-contractor to manufacturers in other industries for the manufacture of peacetime articles for which a demand already exists.

► **With** respect to Fairchild Aircraft Division, no manufacturing problem presents itself in the Hagerstown locality as long as present Army contract for the C-124 Percheron is continued. In connection with the private contract airplane field, Fairchild is giving this problem considerable attention.

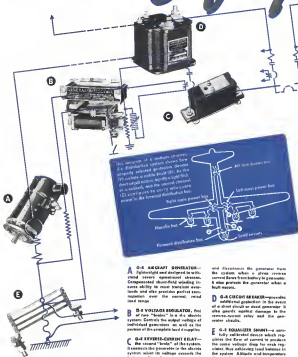
► **Martin**—The Glenn L. Martin Co. feels that future sales possibilities for manufacturers of commercial aircraft are extremely limited and that the comparatively small demand will enable the industry to retain only a minor portion of the nation's aircraft producing capacity. The manufacturing of commercial aircraft, in which Martin has always been one of the leaders, is considered a potential source of future sales, although the company has no orders for such craft at present.

A small group of Martin em-

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- A—AIRCRAFT GENERATOR**—lightweight and designed to withstand severe operational stresses. Compressed short-field winding increases ability to meet transient overloads and also provides perfect synchronization over the normal, rated load range.
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- C—REVERSE-CURRENT RELAY**—the second "brake" of the system. It controls the generator in the electric system when its voltage exceeds the battery voltage by a given amount.

- and disconnects the generator from the system when a given reverse current flows from battery to generator. It also protects the generator when a fault occurs.
- D—CIRCUIT BREAKER**—provides additional protection. In the event of a short circuit or dead generator it also guards against damage to the reverse-current relay and the generator circuit.
- E—EQUILIBRIZER SHUNT**—a specially calibrated device which regulates the flow of current to produce the same voltage drop for each generator thus balancing load balance in the system. Alarms and temperatures do not affect the shunt's operation.

Multi-engine aircraft and large planes can now have a reliable, lightweight d-c electric system that will boost both the safety and simplicity of big-plane operation. With this new d-c system, you can make wider use of such modern electric apparatus as motors, heaters, instruments, and communications equipment. You get better protection for expensive devices and reduce down-time for maintenance. Short circuits, no matter how serious, just can't "go places" and do damage.

Developed for the B-29, this G-E system has conclusively proved its practicality as America's most highly classified war plane.

Here are some of the advantages of the system over conventional single-generator systems:

UNFAILING POWER Normally, the system continuously shifts the load among all of the generators. If one or more generators "kick out" for any reason, the system shifts the load among the remaining generators so that they can handle the load without excessive voltage dips. Plenty of power is still available to operate instruments, landing gear, and other vital auxiliaries.

SHORTS STYMIED Although all generator circuits are closely co-ordinated, individual circuits become independent once trouble occurs. Short circuits are effectively isolated to hold damage to the minimum.

NO LIGHT FLICKER Despite wide variations in load during take-off and landing, all generators act in co-ordination to maintain extremely uniform voltage.

Aircraft manufacturers are turning more and more to General Electric for completely engineered systems, such as d-c or a-c power supply, ignition systems, and engine-temperature control. Their wartime experience has shown that they save time and eliminate many design headaches when they bring their electrical problems to G.E. in the earliest stages of their planning. May we do the same for you?

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GENERAL ELECTRIC

Lightplane Diesel Perfected

Perfection of a four-cylinder diesel engine for small personal aircraft is announced by Fred Thibault, former chief engineer and consulting engineer for the Allison Engine Co. of Dallas, Tex.

Thibault, now located in Brea, Calif., told Aviation News that a four-cylinder prototype rated for 100-hp at 2,600-rpm, has completed a test stand run successfully and within the coming month will be installed in a plane, possibly a Luscombe, for flight demonstrations.

Test Power.—He reported that in the test run the engine actually developed 125-hp at 2,100-rpm, with a fuel consumption of three gallons per hour.

The inventor said he intends to license his design to a major manufacturer for commercial production of 100 and 125-hp four-cylinder models, and 150 and

175-hp six-cylinder models. He said he is considering several manufacturing offers, including one by a Los Angeles firm and another by "an airplane manufacturer in the Philadelphia area."

The Thibault engine is reported to operate without exhaust smoke and to possess quicker throttle response throughout the entire throttle range than gasoline engines. A combustion cartridge is used for starting.

Weight Drop.—Thibault declared, "For preliminary production, the engine will approximate the weight per horsepower of comparable gasoline engines, so that they can be used in light aircraft now under production without affecting airplane balance. However, later models can be manufactured with a 10 to 15 percent reduction in weight."

Lockheed President Outlines Air Power

From backing, military and commercial, placed at quarter-billion, research and plane-line production stressed.

Need for research and plane-line production to keep the nation's air power in a state of readiness for whatever the future may bring, was emphasized by Robert Gross, president of Lockheed, at a recent news conference in New York.

Looking ahead to the military aircraft of the future, he forecast that air power would be composed of three main parts:

1. A striking force of uninhabited missiles — unmanned, remotely controlled aircraft which could be sent vast distances.

2. Reconnaissance planes of super-size speed to act as the eyes of the air force.

3. Heavy cargo planes that could service and supply an army or an air force in the field as ships have done in the war.

Gross said Lockheed had firm orders for \$75,000,000 in commercial aircraft, represented by air line orders for Constellation, and conditional orders totaling \$48,300,000 from air lines for the twin-engine Statens and the four Constellation.

Lockheed's backlog of military work was given as \$537,666,272 for the P-80 Shooting Star jet-propelled craft, an unannounced Navy patrol bomber, a long-range transport for the Navy, and some development work.

Work Sheet.—Total backlog, therefore, is \$259,666,272 and Gross estimated that the backlog would take approximately two years to work off. Regarding the future of the company, he said that it intended going strongly into the commercial field, as it had done before the war, but that it also would remain in the military field. Moreover, Gross said the personal aircraft field looked attractive and he felt that the company must get into it—but that it was without specific plans ready for announcement.

Questioned as to the possibility of the air cargo backlog being the most profitable segment of air transportation, he said "I've never been able to get myself as enthusiastic over cargo as I am for the more profitable cargo of passengers and mail. It's wrong to say that while there would be a trans-



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KOLLSMAN AIRCRAFT INSTRUMENTS

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players has been engaged in plastics and chemicals research during the war and the company will continue to employ a small number in this activity. The experience gained by the company in the design and manufacture of power-operated turbines will be put to continued use in the experimental design and production of advanced models as required by the military service.

The company now has five experimental contracts with Army Ordnance for the preserving of ordnance equipment.

Geissman.—Leroy Geissman, president of Geissman Aircraft and Engineering, reported their Naval aviation program is down to 36 airplanes a month, that they are working on new, advanced design, probably utilizing jet power. In the commercial field, Geissman is building some of the amphibians of prewar design, expects to produce a new amphibian of postwar design and has set up an airplane repair shop for general service.

Republic.—Alfred Marchew, president of Republic, told the committee that "comparatively, our Farmington plant looks like somebody had put a quarantine sign on the front door. It has expressed optimism for the future, included in Republic's plans is the four-plane amphibian, the Seabee for the personal aircraft field for which a number of initial orders have been taken. Republic is completing these dealer and distributor

organizations and the schedule calls for production of these airplanes at the rate of 425 a month when they reach a steady level in June of next year.

Republic has just announced a contract with Pan American Airways for a number of Seabee transport, a four-engine high altitude plane which will fly at speeds of 400-mph and more.

In addition, employment is provided for many workmen while the company is looking up for the Seabee and the Seabee through a contract with American Airlines for conversion of 50 Douglas C-54's.

The last P-47 Thunderbolt is off the Republic line, and Marchew says the company is likely ready to put a new military fighter into the air.

Air Design Buses

Mercury Aircraft, Inc., has purchased Penn Yan Buses, Inc., it has been announced by Mercury President J. F. Meade, and will apply the light metal technique developed in the aircraft industry to the manufacture of buses.

Meade points out a need for weight reduction in the construction of buses, without sacrifice of structural strength. It believes this can be attained by the application of its aeronautical experience. The bus company will close its plant at Penn Yan, N. Y., and transfer to the Mercury factory at Hammondsport, N. Y.



THE WIDOW'S MATE

Closest photo of the reasons that turned the Lockheed P-38 Lightning into a formidable two-place night fighter to fly as a companion with the P-47 Black Widow. Visible under the nose is a radar installation while the added cockpit placement for a radar operator is shown behind and above the pilot. The radarscope is getting into a shield surrounding the blackness piercing scope. Designation of the new version is P-38M.

dous increase in passenger, mail and express traffic in coming months, the time would never come when everything and everybody would travel by air.

Gross mentioned that an improved version of the Constellation would come next year.

Ford Air Venture Speculation Arises

Appointment of Clyde Paxon, aeronautical engineer, seen possible groundwork for return to aviation production.

Appointment of Clyde R. Paxon, long associated with the aeronautical and automotive field, as a consulting engineer of the Ford Motor Co. has aroused new speculation that Ford may be contemplating another peacetime venture in aviation.

While Paxon's exact duties were not defined in the announcement, his experience has been divided between aircraft and automobiles. He worked on powerplant research with the National Advisory Committee for Aeronautics in 1923, later was with both the Packard and Studebaker companies. In 1941, he joined the Allison Division of General Motors, went to the Middle East to investigate aircraft operational facilities. Last year, he established aircraft engine development and flight test facilities for the AAF at Willow Run.

► **Recurring Rumor**—The prospect of the Ford company's return to

aeronautics has been a recurring subject of conjecture ever since the firm discontinued production of its all-metal, tri-motor transport about 15 years ago.

Unconfirmed reports during the war centered about a large freighter-type aircraft, while the appointment of Paxon has provoked talk of a possible Ford aircraft engine to compete with General Motors' projected 200-hp powerplant.

Ford's first experience with aircraft was in the middle twenties when Harry Brooks interested Henry Ford in a low-wing single-engine. While very slow, it also sailed slowly and on the whole had good performance. A maintenance error, however, resulted in an accident and Brooks' death. Allegedly because of Ford's great affection for Brooks, and his grief over the latter's death, the Ford company never sought to develop the design.

► **Airline Success**—Later, William B. Stout teamed with Ford to create the Ford Tin Goose, which was used on airlines over the world and some of which, until the past few years, were still in service as freight carriers in Latin America.

New Lightweight Radio

A new crystal controlled, lightweight aircraft communication receiver will soon be announced by the Collins Radio Co., Cedar Rapids, Iowa.

Using the Collins "Austotune" for

British Give Details On Vampire, Hornet

With the lifting of many wartime security restrictions the British have released fuller details on two of its late fighter planes, the de Havilland-made Vampire and Hornet, early reports of which were carried in AVIATION NEWS, June 18.

Powered by the de Havilland-designed Goblin jet engine which was also used in the U. S. P-40 prototype, the Vampire is "believed to be the world's fastest airplane," according to a British statement. Actually, the Vampire is faster than the P-40 above 15,000-ft. At sea level, however, the Shooting Star's 558-mph speed is thought to be tops.

► **Wing Factor**—Lockheed's jet fighter does not include an aileron proportionately to the Vampire at altitude because of the former's wing design which is and to reach the compressibility area sooner than do the Vampire's.

The Hornet, a conventionally powered, two-engine fighter, has a top speed in excess of 475-mph. Like the Vampire, it was designed to function at great altitude. 35,000-ft. The Vampire's claimed operational ceiling is about nine miles.

The Hornet resembles the de Havilland Mosquito and, like it, is of plywood construction. The powerplant installation is unorthodox. Although each engine is a Rolls Royce Merlin developing 2,370-hp, it is mounted in the usual position in the wings, the propellers set at opposite directions.

► **Jet Tests**—This is only one of the propulsive innovations being tried by the Rolls Royce company. It has gone in heavily for jet engines and there are indications that it has already flown a Meteor with a jet-propeller combination.

A third British warplane, just



F-47 P-47 Thunderbolt (See Transportation News Page)

STANDARD...

Federal's INSTRUMENT LANDING SYSTEM

When visibility over an airport shrinks...

Here's the instrument landing system, adopted as standard by the Army and Navy, that provides the sure and accurate pathway to earth... developed and manufactured by Federal... operated the world over.

The pilot, guided by his cross-pointer indicator, flies on the intersection of two radio beams... one, a vertical pattern set up by the localizer transmitter which keeps the plane centered over the runway... the other, a horizontal pattern set up by the glide path transmitter

which brings the plane to its fine-point landing. Countless perfect instrument landings by skilled American pilots prove the reliability of Federal's Instrument Landing equipment... the result of a decade of intensive research... an important contribution to the war... with even wider service promised for the coming age of the air.

For the first in radio aids to aerial navigation and communications equipment... see Federal first.



F-47 Instrument Landing System (See Transportation News Page)



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PARKING BRAKE VALVE

for All Aircraft with Hydraulic Brakes



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Specify the fully service-tested Scott Model 4200 Parking Brake Valve for all airplanes equipped with hydraulic brakes. Fully CAA Approved. Increases the safety factor for pilots and flight personnel alike. Here are some pertinent facts: Weight of arm and assembly, 4.75 lbs. Working pressures—50 to 850 lbs. Operating temperatures 40° F. to plus 165° F. On the mechanical side, the Scott Model 4200 has an AM-A-17 Aluminum Alloy body, hard brass seat and steel plated arm assembly. Scott Quality-built, you'll find it adds an additional sales feature to your airplane.



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take off the secret lot, is the Freibird JV, the only single-engine torpedocarrying aircraft. It is built by Blackburn Aircraft Ltd., which has specialized in naval aircraft.

Powered by a Bristol Centaurus 2,500-hp. engine, the Freibird has a span of 51-ft., length of 39-ft., and a gross weight of 13,670-lbs., which is more than the usual ship-based airplane. Just going into service with the British fleet, it is projected also as a fighter and dive bomber.

Canadian Surplus Sale Rule Stressed

Many inquiries by prospective purchasers in the United States of surplus Canadian aircraft has resulted in a reiteration by the Canadian War Assets Corp. that approval from the United States surplus disposal agency is necessary before American citizens can buy the surplus.

Aircraft sold by the Canadian corporation are certified as worthy by the Canadian government's Department of Transport, and stores carried in *Airline News* at various times about WAC surplus aircraft availability have brought about inquiries from the United States to Canadian officials. They suggested that prospective purchasers of Canadian surplus aircraft keep this approval requirement of the Surplus Property Board in mind.

✦ *Caution Only* — The War Assets Corp., currently has only Cessna Crusoe twin-engine transports for sale, but expects other types from time to time. The Aircraft Division of WAC points out that numerous prospective purchasers in the United States "are not eligible due to the present agreement existing between this corporation and the U. S. Surplus Property Board wherein neither government will endeavor to dispose of its airplanes on the other's markets unless the items or equipment required are not available in the inquirer's country."

New Interior Plastic

A plasticized polyvinyl chloride material that can be used in place of leather, rubber and bakelite in aircraft interiors, with a saving in weight, is being marketed by the aeronautical sales division of the B. F. Goodrich Co.



FIRST OF THE SUPER-TRANSPORTS BOEING'S NEW STRATOCRUISER

• Product of a wholly fresh concept of basic aircraft design, the Boeing Stratocruiser opens a great new era in air transport.

• The military prototype of this airplane, the Army's C-97 transport, broke all existing speed records on its first coast-to-coast flight. It flew the 2323 miles from Seattle to Washington, D. C., in 6 hours, 3 minutes and 50 seconds, at an average speed of 383 miles per hour.

• But even more significant than speed are the Stratocruiser's other characteristics — its extraordinary versatility, payload capacity and low operating cost — results of Boeing's broad experience and aggressive engineering thinking. The following pages show what the Stratocruiser is equipped to do.



LOW COST OF OPERATION

In the Boeing Stratocruiser, high aerodynamic and structural efficiency, ease of maintenance and rapid-loading features all contribute to economical operation. A high ratio of useful load to gross weight means less operating cost per unit of payload. And high cruising speed makes possible more trips in a given period, distributing all fixed costs over more passenger-miles and ton-miles. This airplane can operate profitably even when carrying less than 25 per cent of payload capacity at present airline rates.

OUTSTANDING PERFORMANCE

One of the reasons why the Stratocruiser is far outperforms competitive airplanes is the Boeing 117 wing, which enables it to do more work for its weight and size than any other transport. High wing loading and low gross weight per horsepower make possible faster cruising speed and greater all-around performance. In addition, it is cleaner aerodynamically than any comparable aircraft.

A PROVED AIRPLANE

The Boeing Stratocruiser is not a "paper airplane." It is a flying airplane, with "bugs" eliminated through extensive tests of the military prototype. After its cross-country



flight, faster than any other aircraft had ever made the trip, it landed at Washington without a single broken requiring maintenance attention. Newest member of the famous Boeing 4-engine family, which includes the Flying Fortress, Stratoliner and Clipper, it embodies many advances witnessed in the mighty Boeing B-29 Superfortress.

SAFETY AND RELIABILITY

The design of all the Stratocruiser's structural and mechanical elements gives exceptional strength without increasing airplane weight. Superior safety is assured as a result of its unusual ease of control, pilot visibility, stability, good stall warning and excellent stall characteristics, thermal anti-icing and other advancements. New war-developed electronic devices will be available for installation, making possible safer operation both in landing and in flight. Additional safety is provided by high-altitude performance, allowing normal flight above storms, even with one engine inoperative.

GREATER UTILITY

The Stratocruiser's new-dock, clean-cabin design permits adaptation to all types of operation—cargo, high density passenger traffic or luxury travel. Some of the possible





FACTS

ABOUT THE BOEING STRATOCRUISER

More than any other post-war transport, the Stratocruiser offers:

- 1 Higher performance
 - 2 Greater economy
 - 3 Proved ability
 - 4 Highest standards of safety
 - 5 Greater versatility
 - 6 More work capacity
 - 7 Added passenger comfort
 - 8 A better background of transport and combat airplane experience
- ... and its prototype is actually flying today.

BOEING

COLLEAGUES OF THE B-52 SUPERFORTRESS • THE F-105 FIGHTER • THE NEW STRATOFORCER
THE BOEING T-37C • THE STRATOCRUISER • THE AMERICAN L-1030

versions are: 114 passengers and cargo; 88 passengers and cargo; 75 passengers or 26 berths, 19 seats, lounge and cargo; 72 passengers and two cargo holds, or all cargo. This airplane provides exceptional operating economy for both short flights of 800 miles and long-range intercoastal service. On long flights it can carry both a full fuel load and large payload. At short range, the large interior volume permits maximum payload.

EASE OF MAINTENANCE

Ground service maintenance on the Boeing Stratocruiser is highly simplified. The two-lube construction allows easy access to all tubing, electrical and control assemblies. Power-plants are quickly removable, or accessible without removal for inspection or adjustment. All four units are interchangeable, simplifying overhaul and engine change procedures.

PASSENGER APPEAL

The Stratocruiser offers unprecedented passenger comfort. Its spacious interior provides more room for large, easy seats, a lounge, excellent galley and lavatory accommodations, and greater freedom of movement. High wing-loading and high speed tend to smooth out air bumps. Pressurized throughout, the airplane maintains comfortable atmospheric conditions inside the cabin at all altitudes. Ground level pressures can be retained without change up to 15,000 feet, eliminating ear-discomfort in ascent and descent. Insulated against noise and vibration, it is one of the quietest transports ever built.

PERSONNEL

Jeannette Lempke Named Ninety-Nines President

The Ninety-Nines, organization of women pilots, has elected Jeannette Lempke of Saginaw, Mich., president, succeeding Ethel A. Rieck of Fergus, Calif. Formerly vice-president of the National Aeronautic Association, Miss Lempke is succeeded in that post by Belle Helmer, Omaha, secretary during the past year. Ruth A. Helms, former WAAW, of Washington, is the new secretary of Ninety-Nines and Evelyn C. McKee of Miami Springs, Fla., remains as treasurer.

Col. Richard DeKleins, former administrative officer for the Army Air Force at the Pentagon, has joined American Airlines as executive assistant to C. R. Smith, chairman of the board.

Capt. Asa Baustre, Jr., has resigned the position of director of Aeronautics for Alabama, from which he has been on military leave in the Army Air Force. Baustre has held many prominent aviation positions in Alabama and it will leave throughout the country.

William T. Smith, until recently president of the Canadian governmental-owned Victory Aircraft, Ltd., Toronto, has been appointed deputy



PUBLIC RELATIONS CHIEF:

Ken Ellington's appointment as director of public relations for Republic Aviation Corp., has been announced. Ellington has been manager of the Aircraft Manufacturers Council, eastern region, and former secretary of the Aircraft War Production Council, East Coast.

minister of the Department of Reconstruction and Supply, Ottawa, replacing R. A. C. Henry, who has resigned to give more time to his post of chairman of the Canadian Air Transport Board.

James E. Conner, left, has been appointed maintenance superintendent



of Pan American Airways' Alaska service, replacing Peter Giesse, right, transferred to Pan Am's Atlantic division in New York. Conner, an assistant engineer, joined Pan Am nine years ago as an apprentice engineer. He was transferred to Seattle in 1941.

William I. Wilson, vice-president of Kellert Aircraft Corp., has been elected new chairman of the public relations advisory committee (Eastern Region) of the Curtiss-Wright Aircraft Association, succeeding James M. Swetlock of the Curtiss-Wright Corp. Joseph E. Lewis, Jr., director of public relations for the Fairchild Engine and Airplane Corp., was elected vice-chairman.

Richard C. Higgins (photo) has joined Transcontinental & Western Air, Inc., as assistant to the vice president of traffic. Higgins has had travel experience with the Command-Air Group Steamship Lines, K-W-Liner Travel Club and Anchor Steamship Line. He had been with Pan American Airways since 1941, prior to joining TWA, as tariff agent handling rules and regulations, rates and tariffs for passenger and express divisions.

William H. Hettel, formerly traffic manager and later staff assistant to the executive vice-president of Glass I. Martin Co., has joined TACA Airways as general traffic manager, southern region, and will be based in New Orleans. Hettel previously was senior staff member for the Civil Aeronautics



HEADS NAA REGION:

Don V. Sorenson's appointment as National Aeronautic Association regional representative for the Southwest has been announced. Sorenson, who will have headquarters in his region, has been executive director of Federal Airline Associations since its formation and prior to that was with All American Aviation as public relations director. He has been a pilot since 1923 and plans to use a personal plane in covering his new assignment.

Board, Washington. He is a veteran airline man, having been with Western Air Express before it became TWA.



TWA APPOINTMENTS:

Leo R. Ollerens, left, former assistant director of the treasury division of Standard Airplane Co., Wichita, has joined Transcontinental & Western Air, Inc., as assistant to the treasurer. Dr. John H. Purkey, right, has been named to head TWA's newly created Air-Education program. He will work with all types of educational institutions to share the technical and research material available within TWA. He has been with the U. S. Office of Education and recently completed a year's survey of the educational institutions of South and Central America. He has also made documentary films for the Army.

A NEW CONCEPT IN AIR TRANSPORT

The Martin 202

Obsolescing all commercial aircraft of her class, the Martin Two-0-Two provides much higher speeds, more luxurious accommodations and more cargo space than any transport of comparable size. Low direct flying costs and maintenance costs assure profitable airline operations—at fares below first-class railroad rates. Here are some reasons why.

- Cruises at a speed approaching 300 m. p. h.—speed of 100 m. p. h. faster than present day transports.
- On a 250 mile city-to-city hop, direct flying costs, exclusive of operating overhead, are less than one cent per seat mile.
- Carries 30 to 42 passengers—in luxury unexcelled by even the largest 4-engine air liner flying today.
- Unrival passenger comfort assured by comfortable, roomy seats, plenty of head room and leg room, large windows, modern heating, ventilation, sound-proofing and lighting.
- Has far more cargo and baggage space (525 cu. ft.) than any transport of comparable size.

● Three large exterior doors, and two large doors between passenger and cargo compartments, permit swift loading and unloading to cut waiting time at airports.

● Will utilize every new electronic device, including radar, to permit all-weather flying.

● Embodies such improvements as reversible pitch propellers, heat anti-icing, ionaster flow wings, tricycle landing gear.

● Flexible Moving fuel cells cut maintenance costs and contribute to safety.

● Equipment is located below floor, easily accessible for servicing through exterior hatches.

The Glenn L. Martin Company, BALTIMORE 3, MD.



Airline Earnings Forecast By Financial Firm Analysis

Goodbody and Co., of New York Stock Exchange, presents projection of income for 12 carriers; new study uses compromise of peace and wartime profit margins in calculations.

A pessimistic projection of airline earnings is advanced in a current analysis presented by Goodbody and Co., New York Stock Exchange firm.

Traffic of the airlines is expected to increase from four to seven

times over present levels in the next three to six years. Based on this expectation and assuming satisfactory unit operating profits with income taxes at 42 percent and with capitalizations increased by 25 or 50 percent, earnings are

TABLE I
Estimated net per share with four times present traffic under varying conditions

	A	B	C	D	E	F
American	\$6.25	\$4.65	\$7.90	\$5.90	\$8.90	\$9.60
Boeing	3.25	1.15	3.90	0.90	5.50	6.75
Ch. & E.	3.65	2.50	4.65	2.00	3.40	1.79
Delta	2.20	1.65	2.65	1.65	2.80	1.19
Eastern	10.70	5.30	8.50	6.30	7.20	3.50
National	3.39	1.40	2.15	1.30	2.15	1.19
Norfolk	1.52	0.70	1.25	0.60	0.90	0.55
Northeast	4.65	2.35	3.70	1.95	3.10	1.05
PCA	3.65	2.70	4.90	3.15	3.40	1.90
TWA	1.00	1.00	4.00	3.00	5.20	1.65
United	6.00	2.90	4.00	2.30	4.90	1.00
Western	2.00	1.50	2.40	1.20	2.90	1.00

Key: A—10 cents a mile profit and present capitalization.
B—5 cents a mile profit and present cap.
C—10 cents a mile profit and present cap. plus 25 percent.
D—5 cents a mile profit and present cap. plus 50 percent.
E—10 cents a mile profit and present cap. plus 25 percent.
F—5 cents a mile profit and present cap. plus 50 percent.
Source: Goodbody and Co.

TABLE II
Estimated net per share with seven times present traffic under varying conditions

	A	B	C	D	E	F
American	\$12.50	\$7.72	\$12.90	\$8.25	\$18.90	\$5.15
Boeing	2.75	1.90	3.00	1.50	2.50	1.25
Ch. & E.	6.50	4.20	5.60	2.10	3.45	2.80
Delta	4.40	3.00	4.50	2.40	4.00	2.00
Eastern	18.75	9.45	15.00	7.50	11.90	6.20
National	6.80	3.90	4.50	2.25	2.35	1.80
Norfolk	2.40	1.20	1.50	0.60	0.90	0.40
Northeast	9.40	4.25	6.80	3.45	5.55	2.85
PCA	6.20	4.65	7.90	3.70	6.20	3.10
TWA	14.75	7.40	11.40	5.00	8.50	4.90
United	10.75	5.10	8.40	4.15	7.20	3.40
Western	3.50	2.75	4.40	2.20	3.50	1.90

Key: A—10 cents a mile profit and present capitalization.
B—5 cents a mile profit and present capitalization.
C—10 cents a mile profit and present cap. plus 25 percent.
D—5 cents a mile profit and present cap. plus 50 percent.
E—10 cents a mile profit and present cap. plus 25 percent.
F—5 cents a mile profit and present cap. plus 50 percent.
Source: Goodbody and Co.

projected for twelve of the airlines.

Conjecture Fails—It is recognized that future operating profits and capitalizations are highly conjectural. Prior to the war, unit operating profits of most air carriers were very small, Eastern and American being exceptions.

Today, profit margins are quite large, 25 to 30 cents per dollar of gross. If typical pre-war unit operating profits were used, per share results would be meager regardless of the volume.

Similarly, if today's margins were used, the results would be astounding. For this reason, Goodbody and Co. have taken a compromise of the two extremes and presented their projections accordingly.

Tabulation—The substance of these forecasts appears in the accompanying tables. Table I discloses estimated per share earnings with traffic volume at four times present levels. It can be seen, for example, that American is expected to show earnings of \$5.93 per share operating at a profit margin of 16 cents a mile and with its present capitalization.

Should profit margins drop to 5 cents a mile, these per share earnings would decline to \$4.45. On the other hand, should the present capitalization be increased by 25 percent, then profits would be inflated to \$7.93 and \$5.58 per share with profit margins of 10 cents and 5 cents a mile, respectively. With capitalizations increased by 50 percent, still further dilution of earnings would occur.

The effect of a seven fold increase in traffic on airline earnings is shown in Table II. Using American again as an example, it can be seen that this carrier's earnings would amount to \$15.93 per share if profit margins of 16 cents a mile with present capitalization were obtained. A 25 percent increase in the capitalization and a profit margin of 5 cents a mile would return earnings of \$5.15 a share.

Intensified service of routes already served may increase traffic greater than average for the industry as a whole. As new equipment is added, it will become feasible to exploit present routes to a greater degree. It is these ever-changing variables which make uniform projections very difficult. The estimates advance, however, serve as a convenient form of making calculations on a comparative basis for the separate lines.



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PRODUCTS

Many civilian products will require precision-made screws of the same high quality that has been perfected for aircraft instruments.

Formerly, it was considered necessary to use Swiss watch-making machinery to produce this fine precision which "National", by its method of upsetting and finishing the head and rolling the thread, has produced all through the war.

From the tiniest screw to the largest sizes, accuracy and uniformity are maintained through "National's" methods of manufacture and thorough inspection. Furnished in many grades of ferrous and nonferrous metals, e.g., carbon steels, stainless steels, brass or bronze.

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SPECIAL AIR SERVICES

CHARTER NON-SCHEDULED INTRASTATE

Maryland Sets Liberal Policy For Intrastate Airlines

Public Service Commission grants franchises to three companies, including bus line, ordering beginning of service within six months.

Maryland Public Service Commission, acting under orders of the governor to promote aviation, has granted charters to three intrastate airlines for unadapated routes. Service must start within six months from the date of the certificates.

"The commission, in considering the several applications, has been mindful that the policy of the state as announced by Gov. O'Connor and as reflected in recent legislation is to promote the rapid development of air service in Maryland and make it available as soon as possible to all communities which desire it," the Commission stated.

Maryland's populous areas are separated by Chesapeake Bay and mountains and the state, like Michigan, is more federative minded than most.

Keegan Factors—Two of the companies will use single-engine aircraft and one plans to operate twin-engine Bonairs. "While being inclined to put more confidence in the aircraft equipped with two engines than in a single-engine aircraft, we find that the record indicates a high degree of dependability in such engines and since it is quite apparent that many of the smaller communities will be unable to have better than Cessna 440s, which we believe will safely accommodate only the light single-engine aircraft, the use of such aircraft in daylight contact flying seems to be justified and it is necessary if many of the small communities are to have air service," it was asserted.

The Commission denied only four airports suitable for twin-engine equipment. Cumberland's municipal airport is on West Virginia soil and may not be available for intrastate service.

"While no showing was made at the public hearing of any interest-

ing public demand for air service and the Commission has no means of estimating at this time the volume of traffic to be served, it seems reasonable to expect that the establishment of such a service will stimulate interest therein and that the more convenient and attractive the service is made the more rapid will be its development."

Bus Entry—Another entering wedge by surface carriers into air transportation, without need for a federal certificate, is seen in the plans of Red Star Motor Coaches, Inc. to connect Baltimore, Eastern, Salisbury, and Ocean City by air. It already operates buses between Baltimore and principal eastern shore points, and is prepared to coordinate bus and aircraft schedules "to give maximum service to the public."

Commenting on this feature of Red Star, the Commission stated: "The coordination of bus and aircraft operations will provide complete service during the development period when, for lack of adequate landing fields, it will not be possible to reach many of the towns by aircraft. The combining of surface and air operations will produce a mobility which will permit the use of each, to whatever extent is currently required and to the best advantage of the public." Red Star proposes to set Beechcraft Fare will be 19 cents a mile.

Columbia Airlines, Inc., which already owns two Boeing 240D transports, is authorized to operate between Baltimore, Hagerstown, and Cumberland. Fare will be 19 cents a mile.

Pas Maryland Airways, Inc., whose plans have been reported earlier in AVIATION NEWS (May 25, 1945) is authorized to fly Taylorcraft single-engine planes in daylight contact service between

Baltimore, Annapolis, Eastern, Cambridge, Crutfield, Chertown, Westminster, Frederick, College Park (Washington suburb), Havre de Grace, Bel Air, Ellicott, Centerville and Brydelyne. Passenger fare will be 6 cents a mile.

A few days after releasing the opinion, the Commission issued general regulations covering control and operation of public air carriers operating under its jurisdiction. These are available from its offices at Baltimore.

Charter Services Get New Demands

New firm illustrates growing pace of air rentals to business executives, J. H. Wilson named vice-president.

Charter service of airplanes for business executives is already beginning to assume an importance far beyond pre-war status and is expected to expand rapidly as more equipment becomes available, and more business firms realize the advantages of air travel.

One of the best examples of this new type of service is the recently formed Central States Aviation, Inc., which, operating from Sky Harbor airport near Chicago, has a fleet of 12 180-hp engine, four-passenger Cessnas being prepared for luxury travel. Two of the planes are already in service and others will be available soon.

Officers—The new company is headed by G. A. Helting, Chicago restaurant operator and aviation enthusiast, as president, with John H. Wilson, former executive director of National Aviation Trades Association, as vice-president, secretary and general manager. Other associates are Herman Krausman, treasurer, Harold C. Muller and William Targson, partners in operation of Sky Harbor airport.

The company plans operation of its planes by company pilots as a round trip fare basis with minimum daily rates which include breakfast. Future plans include expansion of operations to other airports in the Chicago area, with broadening of the company's activities to include fixed base activities such as sales, flight training and service facilities.

Meanwhile, Beech Aircraft Corp., through its customer service department, is providing a temporary service to executives who are awaiting delivery of the post-war

LOOKING AHEAD WITH LEAR



Aircraft has been designed and built with lightness, speed. Many aircraft planes have been equipped with Lear radios — and Lear radios will be used in the future. For Lear radios are made by men who know planes and know what aircraft need and want in radios.

Read what Carl Fiedler, President of Aircraft Corporation says about Lear Radios:

"From the very first installation of Lear radio equipment over six years ago, we at Aircraft have appreciated the engineering thinking, reliability and rugged construction which have resulted in Lear's excellent reputation as the manufacturer of aircraft radio equipment of high performance and great dependability. Consistent installations of Lear radio have been made, both here at Aircraft and elsewhere, and the success of Lear's planes show with us a confidence in the equipment. We are looking forward to Lear's further line of equipment." Signed — Carl Fiedler, President.

This is Lear's experience in producing specialized aircraft radios and direction finding instruments. Lear equipment, built for service for years, has found new favor with private pilots and commercial operators alike. Improved throughout the war, it stands ready to deliver even better performance in the days ahead.

The Aircraft Chief — a new two-place, side-by-side private plane with cruising speed of 230 mph, landing speed 28 mph.

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Pesco MOTOR DRIVEN HYDRAULIC PUMPS

PESCO Motor Driven Fueling Pump
Capacity: 4 g.p.m.—400 g.p.m. 5 g.p.m.—1000 g.p.m.
Pressure: 1000 p.s.i. for 20 minutes of
15-minute intervals. Weight: 14.8 lbs. Motor:
24-volt d.c., 5 1/2 h.p.



Proved by tests of thousands of hours of the toughest kind of use flying, PESCO Fueling Pumps have set a record for performance and dependability that is unequalled. The newest model (illustrated above) has been developed by PESCO engineers to provide a compact, auxiliary hydraulic pump unit for propeller fueling that responds by remote control, with split-second readiness, to the pilot's wishes.

This pump is typical of the many motor driven hydraulic pumps that PESCO has developed for auxiliary operation of aircraft parts. All of them feature Pressure Loading, an exclusive PESCO

development that compensates for wear and the thermal variations brought about by the wide range of altitudes and temperatures through which these pumps must operate. Pressure Loading automatically maintains minimum clearance between pump gears and gear housing, making possible continuous high operating efficiencies under all conditions.

Write for descriptive folders on Motor Driven Hydraulic Pumps to PESCO Products Co. (Division Borg-Warner), 11610 Euclid Avenue, Cleveland 6, Ohio.

In Precision Hydraulics, Fuel Pumps,
Air Pumps, Related Accessories...

PERFORMANCE POINTS TO PESCO FIRST

PESCO FIRST

Beech Model 185. It is costing Cessna, on a monthly basis for \$180 a day to customers desiring this service, with the rental including pilot, insurance, maintenance, repair, and fuel. Beech now has 11 Cessnas, and has 10 more to come.

Air Cargo Company To Buy Douglasses

Files SEC statement to sell common stock to public.

First public stock offering to be listed with the Securities & Exchange Commission by an air freight company was registered last week by Air Cargo Transport Corp. of New York City to set up a national non-scheduled system.

It is proposed to sell \$150,000 of the proceeds for six Douglas C-47s from RMC, \$154,900 for spare parts and engines, radio equipment, maintenance supplies, \$5,000 for motor vehicles and other ground equipment; \$30,000 for hangars, and \$50,000 to repay company's founders. The Douglasses will cost from \$30,000 to \$25,000 each. Possession is expected in a few days. The company's new operation was Lockheed Lodestar.

► **Packets Bought**—Balance of stock money will go for working capital, under present plans, including one or two Fairchild Packets or other available cargo planes, when available.

H. Ray Penzell is president, treasurer, and director. Other officers and directors are Alexander Westerman, Brooklyn, director; Louis DeLovery, Jamaica, L. I., director; William L. Scott, New York, executive vice-president and director; Thomas M. Reilly, New York, secretary, assistant treasurer, director; F. Alexander Mace, Rochester, N. Y., director; and William A. Smart, New York, director. Mace and Smart are to be elected officers after the financing. Founders, and their common stock holdings are: Penzell 34,900 shares; Abraham Gluckson 20,000 shares; Meyer Natelson, 10,000 shares; Alexander Westerman, 10,000 shares; Samuel Shiprock 10,000 shares; and Louis DeLovery, 32,000 shares.

The company, organized under New Jersey charter March 12, 1945, registered 400,000 \$1 per common shares, of which 120,000 are reserved for warrants. The remaining 280,000 shares will be

offered publicly at \$3 a share by a group headed by Raymond & Givens, Inc.

The warrants will entitle holders to purchase an aggregate of 120,000 shares at \$3 in the period ending five years from registration effective date.

► **Warrant Sale**—The stock purchase warrants will be sold by the company at a cent a warrant. For each 10 shares of common stock sold or through underwriters, the underwriters will be entitled to purchase 3 shares of common at a cent per warrant share. In event the underwriters purchase or find purchasers for the entire 200,000 common shares, underwriters will be entitled to purchase a total of 60,000 warrant shares.

National Skyway Cargoes Increase

Further indication of the variety of business which non-scheduled airlines may gain comes from a review of the recent coast-to-coast schedules of National Skyway Freight Corp. of Long Beach, Calif.

Robert Prescott, president, reports that cargoes increasing in quantity and diversity, have included shipment of 8,000 tally bulbs from New York to Los Angeles, 13,660 pounds of grapes, 10,000 pounds of manufactured garments, household furniture shipments, a race horse, drugs, aircraft parts and automobiles.

► **Navy Men Charter Ships**—An appreciable amount of business has come from all-schedule passenger flights, including the chartering of two of the company's fleet of Budd Constellation by 128 enlisted men and petty officers of the U.S.S. Astoria for transport flights to Europe and return to Long Beach. By using transportation they spent more of their 30-day leave at home. Groups of motion picture players have been flown to distant locations, and a Navy aviator, a Constellation was chartered to carry the Philadelphia Eagles, professional football team, and 2,600 pounds of equipment, to Buffalo and return.

Later this month the company expects to fly four thoroughbred racing horses from Hollywood to San Francisco. Stalls will be built into the plane.

► **September Cargoes**—During September alone cargoes included pecanilla, 24 tons of fruits and

vegetables, 17 tons of furniture, 3 tons of machinery, 4 tons of clothing, 4 tons of California wine, 6,000 baby chicks, several motor cars and plane parts. Motion picture players flew from Los Angeles to Las Vegas, and several consignments of Mexican New coast to coast.

Feeder Role Vital Says Idaho Board

The Idaho state planning board has gone on record having support of regional feeder air services as essential to the state's future progress.

Capas of the resolution are being forwarded to chambers of commerce in the state, emphasizing that "feeder airlines are vital to accomplish the tasks of transportation and communication between our regional cities within Idaho and the adjacent states with which we have constant economic relationships."

► **Consensus Asked**—The resolution was adopted at a board meeting which coincided with a session with aert authority at Lewiston, Idaho, who has already filed with Civil Aeronautics to serve points at Oregon, Washington and Nevada for an Knappe Airlines.

Knappe has already flown leading an enthusiasm of Idaho on surveys at proposed feeder routes.

State Rules Against Sharing Charter Craft

Public Utility Commission of Pennsylvania has turned down an application of an operator for a charter air service because of the possibility that aircraft other than these owned by the applicant would be pressed into service.

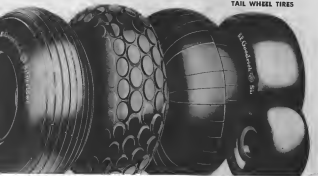
Russell V. (Bob) Trauer had proposed a "call and deliver" service to Erie, Pa., from the Allegheny River and its tributaries within a 20-mile radius of Pittsburgh.

► **Decision Lever**—The Commission indicated that it probably would have given a favorable decision except for that provision of the application which said that aircraft not belonging to the applicant might be used when necessary to meet public demand.

According to a spokesman for Trauer, "It is a question of the Commission being able to supervise an operator, in order to do that they must have control over the equipment through the operator."

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sign, and 4 years of quantity production of \$50,000,000 worth of metal products on prime and sub-contract, Kellett is well prepared to cooperate with you. These 6 steps may enable you to improve product and tool design—speed up production and to simplify production operations—and assure the mass manufacture of simple or complex products developed for industrial or consumer markets.

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TRANSPORT

"Grass Roots" Airline Support Sought By Permanent ATA Unit

Lines designate 400 workers throughout nation to secure local civic, commercial and other organizations' backing of carriers' position on transportation policies; move follows successful blueprint of older industries.

A permanent nationwide organization to enlist "grass roots" support for preservation of sound air transportation policies has been completed by the commercial air carriers through the Air Transport Association.

Taking a cue from older industries where similar groups have been successful, the airlines now have some 400 workers throughout the country who, with the blessings of their managements, will solicit support for the carriers' position on transportation problems from local civic, commercial and other organizations.

Organization Plan—ATA's State Relations Department has divided the U. S. into six divisions, in each of which representatives of carriers in the areas have selected chairmen and vice-chairmen to direct the new organization's activities. These state chairmen, in turn, have lined up co-workers in each of the cities served with scheduled air transportation.

Probably, the first program will deal with the question of exclusive Federal control of common air carriers in interstate commerce favored by the airlines. During the past year, when 44 state legislatures were in session, the National Association of Railroad and Utility Commissioners urged passage of state air carrier bills in 24 of them. Only three, however, enacted laws, and these compelled interstate air carriers.

Opposition for such legislation has continued and, in 1947, the attention is expected to be much more serious than it was last winter. The airlines, hence, are anxious to have Congress settle the question once and for all, and do it at this session.

Action Soon—The new airlines' organization is ready for its first assignment as soon as the Special Committee on Governmental Regulation (a subcommittee of ATA's

State Relations Department) gives it word to start. This may come sooner than expected, since it is understood that ATA's board of directors at a recent meeting decided to support H. R. 3398, with some clarifications. This bill would reserve for the federal government sole and exclusive regulation of common carriers by aircraft operating in interstate commerce.

The question of regulation, however, is not the only problem facing air transportation. The move being directed by the railroads and the Transportation Association of America for integration of all forms of transportation is gaining momentum. Furthermore, the steamships still are fighting hard to get into air transportation. And

when these problems are disposed of, the question of taxation remains.

Chairmen of the Special Committee on Governmental Regulation drafting the new airline organization is O. M. Mosier, vice-president of American Airlines. Mosier also is chairman of Division I. Other division chairmen: H. E. Smyth, Gulfstream, general counsel of Eastern Air Lines, III. Russell C. Cawston, executive assistant TWA, IV. Robert M. Averill, assistant to the president, PCA, V. A. R. Fleen, secretary, Northwest Airlines, VI. Hazen Hinchey, assistant to the president of United Air Lines.

State chairmen and vice-chairmen:

Division I

Connecticut—Chairman: H. Avery Highman, United Van-chairmen, B. E. Collins, J. W. F. Delaney. —Chairman: Harry Shivers, All American Airlines.

Massachusetts—Chairman: W. Nelson Bangs, American Van-chairmen, A. French, TWA, Ford Knight, Northeast, Charles Telen, Eastern (Boston), Sterling Nelson, United (Sagittary).

New Hampshire—Chairman, Paul Collins, Northeast.
New Jersey—Chairman: Harold North, American. Vice-chairman: James Edwards, TWA.
New York—Chairman, Herbert J.



TWA'S CAIRO OFFICE:

TWA's Cairo office, shown above, will be less than 20 hours from Washington under proposed international schedules. Sign above the awning, according to the line's Washington office, says "World's Greatest Airline."

Lyons, American. Vice-chairman, W. R. Lytle, TWA. Eastern section, R. M. Smith, United. Western section, D. Murray, PCA. (New York City.)

Franchising—Chairman, James Walzer, TWA. Vice-chairman, William Paulsen, PCA. (Hawthorne.)

Subways, United. (Eastern section), Edward J. Finkel, Eastern. (Philadelphia.)

U. S. Gates, PCA. (Pittsburgh.)

Island—Chairman, W. C. Hertz, American.

Vermont—Vice-chairman, A. M. Hudson, Colonial.

Division II

Alabama—Chairman, Vance Tomlin, PCA. Vice-chairman, George Hochbach, Eastern.

Florida—Chairman, T. P. Caldwell, Eastern. Vice-chairman, J. D. Cooper, Jr., Eastern.

Georgia—Chairman, E. D. Hagan, Eastern. Vice-chairman, Vic Lukic, U. S. A.

Maryland—Chairman, Richard Holman, American. Vice-chairman, Marshall Butler, PCA.

Mississippi—Chairman, T. E. Hawkins, Chicago & Southern. Vice-chairman, R. L. Blackwell, Delta.

North Carolina—Chairman, James Goodwin, Eastern. Vice-chairman, H. L. Pugh, Eastern.

South Carolina—Chairman, Frank Loomis, Eastern. Vice-chairman, Marvin Dye, Delta.

Tennessee—Chairman, W. S. Weisman, Jr., American. Vice-chairman, M. T. Bellah, PCA. R. C. O'Quinn, American.

Virginia—Chairman, Ralph Provost, Eastern. Vice-chairman, Charles Jones, PCA. George Brody, American.

West Virginia—Chairman, G. W. Hewitt, Jr., American. Vice-chairman, Jack Wilson, PCA.

Division III

Arkansas—Chairman, Fred Debolt, Chicago & Southern. Vice-

Constellation Test

Continued by the disclosure of airline purchase orders, Lockheed Aircraft Corp. announced a Constellation accelerated service test flight of 4,660 miles in an elapsed time of 28 hours and 56 minutes—some 15% less than 50 percent power.

The test run was made between Lockheed Air Terminal at Burbank, Calif., and New York, by LA Col. T. W. Radford and a special Air Transport Command crew.

Schedule-flying time was 8 hours and 35 minutes eastbound and nine hours and 51 minutes westbound. A turnaround ground time of two hours and 58 minutes was spent at Mitchell Field, N. Y.

In continuation of the test the Constellation's engines will be turned through 1,000 hours before overhaul.

chairman, R. A. Culpepper, American.

Colorado—Wiliams R. Auland, Continental. Vice-chairman, Edward N. Schell, United.

Kansas—Chairman, H. A. Stead, TWA. Vice-chairman, Horace Gaten, Continental.

Louisiana—Chairman, William Parker, Chicago & Southern. Vice-chairman, John H. Gaudin, Eastern.

Montana—Chairman, David W. Shaghtun, American. Vice-chairman, John Thomas, TWA.

New Mexico—Chairman, R. A. McGuire, TWA. Vice-chairman, Fred Shuster, Continental.

Oklahoma—Chairman, Robert Hollar, American. Vice-chairman, William M. McCall, Western.

Texas—Chairman, M. D. Miller, American. Vice-chairman, Robert Harris, Eastern. D. Lee, Eastern.

Division IV

Illinois—Chairman, L. W. King, American. Vice-chairman, C. E. McColson, TWA. M. W. Stevenson, United.

Indiana—Chairman, Frank Bodwell, American. Vice-chairman, N. W. Wildron, TWA.

Iowa—Chairman, Jack Barnes, Mid-Continental. Vice-chairman, C. Sharpe, United.

Kentucky—Chairman, A. Land Rogers, Eastern. Vice-chairman, Andrew Harshbarger, American.

Michigan—Chairman, Thomas Kerr, PCA. Vice-chairman, Jack A. Topperson, American. Jerry Hill, PCA.

Ohio—Chairman, Paul D. Strubbe, TWA. Vice-chairman, Norman E. Hertz, AA. Jack Bartholomew, TWA.

Washington—Chairman, Ken LaFollette, Northwest. Vice-chairman, John Dumas, PCA.

Division V

Minnesota—Chairman, H. C. Timberlake, Northwest. Vice-chairman, C. I. Stewart, Northwest.

Nebraska—Chairman, H. E. Campagna, Northwest. Vice-chairman, R. S. McKee, Western.

Nevada—Chairman, C. M. Scherer, United. Vice-chairman, Bruce Snyder, Mid-Continental.

North Dakota—Chairman, C. H. Delapierre, Northwest. Vice-chairman, John Lindholm, Northwest.

South Dakota—Chairman, M. A. Kennedy, Northwest. Vice-chairman, C. H. Delapierre, Northwest.

Wisconsin—Chairman, H. L. Campagna, Northwest. Vice-chairman, Jerry Snodder, Western.

Division VI

Arizona—Chairman, J. S. Rabitt, American. Vice-chairman, Dick Smith, TWA.

California—Chairman, Perry Tait, TWA. Vice-chairman, Bob Cuskey, United. William Sample, American.

Idaho—Chairman, Robert Schell, United. Vice-chairman, Clavin Trapp, Western.

Nevada—Vernon Hill, Western. Vice-chairman, William Brummet, United.

Oregon—Chairman, E. C. MacKorty, United. Vice-chairman, Sherwood Galt, Northwest.

Utah—Chairman, Samuel Kellogg, United. Vice-chairman, Lou Liden, Western.

Island Appeal

The retiring commander of the Pacific wing, Naval Air Transport Service, Capt. E. D. Southard, is making the South Pacific island appeal for the post-war air tourist, except for one or two guinea pigs.

Captain Southard recently ended two years in his NATS job. A former board member and vice-president-elect of the Air Transportation Council, and Western Air, he said he plans to settle down in Arkansas, and generally it was believed he will remain soon in TWA.

Shipboard Features—He now no longer is desired, for a dozen or so the average tourist to undertake exceptionally long trans-ocean flights at the service of "steaming travel and the pleasures of shipboard life."

Washington—Chairman, D. C. Tapp, Western. Vice-chairman, Willis Comp, United.

'Chosen Instrument' Becomes Mail Issue

Congressional consideration of appropriation to cover new overseas airmail contracts to sevice competition arguments.

The international aviation issue of regulated competition versus a "community company" will again be thrashed out when a Post Office Department delivery appropriation, to cover airmail contracts for the three lines recently awarded North Atlantic routes, comes before Congress.

Advocates of the "chosen instrument" policy, including Sen. Patrick McCarrin (D-Nev.), will attempt to block appropriations for airmail contracts for Transcontinental & Western Air and American Airlines Overseas, leaving Pan American Airways as the sole mail-supported carrier on the international field.

McCarrin is a member of the Senate appropriations subcommittee on the Post Office Department.

Notes Awakened—The Post Office Department, turned down by the Budget Bureau on its proposal for a blanket appropriation to cover the North Atlantic air mail contracts, is now waiting for CAB to set rates so that an exact appropriation request can be made.

It is well remembered in aviation circles that the opposition of the Senate Appropriations Com-

21 JEWEL ENGINE

Like a fine watch, the Allison engine has a "21-jewel movement"—ensuring dependability and long life. The jewels are the major silver-plated and copper-lead cast sleeve-type bearings, which absorb terrific

loads and high temperatures from shafts revolving 3,000 times a minute. ★ Twenty years ago, Allison engineers pioneered the development of higher-precision sleeve-type bearings to enable engines to develop higher horsepower. Today, in scaled in virtually every aircraft engine made in this country—as well as Allison—these bearings have made good—at horsepower far beyond the dreams of the Allison pioneer. ★ Now

Allison bearings are available for other fine engines and machines to serve a world at peace.



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POWERED BY ALLISON

F4U—Lightning
P-51—Mustang
P-40—Warhawk
A-1H—Hellcat
F4U—Lightning

Approximately 70,000 Allison engines have been built for the above planes of the U. S. Army Air Forces

LIQUID-COOLED AIRCRAFT ENGINES

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Indianapolis, Indiana

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office killed an armed appropriation to American Export Airlines in 1946—despite Administration support. At that time, however, there was another major issue involved: American Export was controlled by a steamship operator. It was on the argument against surface carrier control over an air carrier that expert's appropriation was defeated.

Meanwhile, Sen. McCarran is withholding further action on his "All American Flag Line bill," stating that he is undecided as to whether to introduce a new version of the legislation for reference to Senate Interstate Commerce Committee or to offer a new version as a substitute for his old bill which moved being reported out of Senate Commerce on a tie vote. It is believed that McCarran may wait until Congress has acted on air mail contract appropriations for the North Atlantic before pushing his community company legislation.

N. J. Air Service To Resume Soon

Metropolitan New Jersey is looking forward to resumption, at a matter of weeks, of airline service it has lacked more than three years, with announcement early this month that the War Department is ready to turn back Newark Municipal Airport to the city.

Twenty daily commercial flights have been authorized by the Army Air Forces, which will retain use of a part of the field. Resumption of schedules is awaiting Civil action: Eastern Air Lines, American Airlines, United A. L. Lines and TWA hold leases with the city and four other lines are understood to be ready to sign.

Improvements—With return of the field the city will require an estimated \$10,000,000 in improvements should the Army moved in. About \$10,000,000 went the extension of the field and construction of new, larger runways.

The Army will retain about five percent of the field, or approximately 15 acres. Eventually it will give up all but one hangar, to be held for emergency use.

Announcement of the Army's willingness to vacate revealed a conflict in high War Department and Air Forces offices. One faction had hoped to retain the field as a permanent defense installation,

while another had other facilities in mind.

PICAO, IATA

Top Issues Slowed At Twin Meetings

Interim Council lags in consideration of political, economic questions upon which airline group seen as soon largely dependent.

Montreal became the interim capital of international air transport last week as two world aviation organizations—one representative of governments, the other of airlines—met there.

The Interim Council of the Provisional International Civil Aviation Organization (PICAO) opened its second session with an agenda expected to keep it busy until early December. The International Air Transport Association (IATA), holding its first annual general meeting, quickly and smoothly dealt with an agenda initially emphasizing organizational questions.

Speeded Back—Both were seeking to carry forward tasks assigned them respectively at Chicago last year and at Havana last Spring, but American News correspondents reported that while it was clear that a multitude of problems stand in the way of aviation's full utilization, it was not nearly so clear that as rapid progress was being made toward solutions as governments and airlines would be expected to insist upon.

PICAO appeared to be doing admirable work on the technical side of aviation, but there was some concern that it was not moving as rapidly to corresponding outstanding political and economic issues left in the air at Chicago. To the extent that PICAO defers action on these matters, IATA will be hampered in its operations.

Trend of deliberations at PICAO centering on the controversial free freedom question indicated that there will be no unilateral commercial rights in any agreement on international air transport which PICAO's Interim Council may eventually submit to the body's full assembly.

Convention Agreement—Recognition of advantages of a multilateral convention in the development of international air transport was the present system of bilateral arrangements was unanimous, but it was generally conceded that such an agreement will include definite commercial freedom limitations.

First stages of the work of two statutory committees—an air transport and air navigation—have been accomplished and detailed study of questions involved have been turned over to subcommittee groups. The air transport committee has suspended meetings pending reports from three special committees appointed to consider matters under its jurisdiction.

Work of the air navigation committee has been partially delayed until PICAO's secretariat is completed and the necessary technical advisers are available to continue, but few technical subcommittees are in session.

Staff Shortage—Meetings of other air navigation subcommittees scheduled for next month were canceled at the suggestion of Dr. Edward Warner, Interim Council president, because of the staff shortage.

Most IATA sessions were behind closed doors. The organization confirmed unanimously its executive committee's appointment of Sir William Peckard, British director of civil aviation, as director general of the new organization. It also decided to increase the executive committee from nine to 13, new appointments being Brig. Gen. T. H. Wilson, head chairman of Transcontinental & Western Air; Maj. Gen. T. H. Shen, vice-president and managing director of China National Aviation Corp.; and Hassan Sadek Fawzi, general manager of Mitr Helwan, Egypt.

C-54 Exemption

The Civil Aeronautics Board has adopted a special Civil Air Regulation making exemption to Part 84 of CAR in order to permit use of C-54E type airplanes in scheduled operations.

Effective from Oct. 11 to Feb. 1, 1946, this type aircraft will not be required to have a master switch disconnecting all sources of electrical power from the electrical distribution system. In addition, a maximum take off gross weight of 61,000-lbs may be authorized when there are no fuel dump chutes on the plane.

FEARS—C-54Es were recently declared surplus by the Army and allocated to the three current—American Airlines Overseas, Pan American Airways, and TWA—certificated for trans-Atlantic operations.

Plane common sense—to help flyers



Mechanix Illustrated keeps its feet on the ground while its head and heart go flying. Every one of its air-minded features tries to give practical, usable help to every fellow who's hoping to fly his own plane some day. Maybe it'll be one of the new Piper Skyvoles pictured on the August cover and described in detail inside. A fellow can use things like that -

Part of Mechanix Illustrated's steady job is to take ideas out of readers' minds, too. There's a fear of flying which some fellows have that will hurt peace-time plane prospects. A lot of "hazards" have been played up - spectacular wartime hazards have been widely ballyhooed. They've created wide misconceptions. So Mechanix Illustrated, alert to the need, decided it was time for plane truths. A feature in August tells fellows "Don't Be Afraid to Fly!" - and tells why. It's going to do you some good, too -

Mechanix Illustrated is the newest magazine in the aviation field. The newest is here first - the easiest is here always. Fellows who are planning to fly their own planes tomorrow are getting their own plane ground course and pre-flight instruction out of every flying-filled issue of Mechanix Illustrated now. Thousands today—thousands more when the war's won—consider it their aviation magazine. Aviation advertising in Mechanix Illustrated talks the language these fellows pay attention to. You can change flyers to buyers by telling them your plane for them.

The Magazine that Makes Plane Facts Exciting.

BAWCETT PUBLICATIONS, INC., 293 Madison Ave., New York 17, N.Y., World's Largest Publishers of Monthly Magazines

AA Considering Additional DC-28's

Public response to American Airlines' use of a 28-passenger DC-3 between New York and Boston has been so favorable that the company probably will fit others to carry a similar passenger load on short flights.

American calls the plane the DC-28 Deviant whether to build more will be based on air travelers' reaction and operational data. Details on operation are not yet available.

Inside Check.—To obtain public reaction, cards with requests for opinions were placed in the seats, and company representatives rode on the initial trips. Information from these two sources has convinced the company that people like the modification, and particularly that feature of it whereby they handle their own baggage (Aviation News, Oct. 8).

A number of first time air travelers have ridden on the airplane. It probably was one of these who told a fellow-passenger that he was riding in a DC-4 and thought it was surprising that the airlines had been able to place them in service so rapidly.

Except for one special trip to Washington, the modified DC-3 has been used exclusively on the New York-Boston run.

Pan Am Domestic Entry Opposed By 10 Lines

Pan American Airways' attempt to enter the domestic air transportation field without the requirement that traffic be destined for foreign ports, appears headed for strong opposition.

At a prehearing conference last week on PAA's application for eight routes across the U. S. to link its international gateway cities, on which it could carry domestic air travelers, 10 other airlines indicated that they will work either to oppose or to appear as opponents through requests for a consolidated proceeding. Some of these lines have already filed applications for service in the areas involved, while others contemplate doing so. The 10 are: American Airlines, Braniff Airways, Delta Air Corp., Eastern Air Lines, National Airlines, Northwest Airlines, PCA, TWA, United Air Lines, and Western Air Lines.



Inside 'Mass Travel' DC-3: Cabin crew of American Airlines' 28-passenger DC-3, looking forward rear, shows seating arrangement and narrowed aisle. Closeup shows double seat with full width safety belt, baggage and root racks for passenger use, and standard buffet with window in partition. Non-adjustable seat backs have a hinged arm rest between them.



IT'S EASY TO LOAD THE FAIRCHILD PACKET



The Army can drive 10-wheeled trucks, tanks, and many other kinds of heavy military equipment right into the spacious hold of the Fairchild "Packet".

Or bulky cases can be "walked" from a trailer truck directly onto the floor of this "flying boxcar." (Note: Horizontal "Packet" floor is same height as standard truck floor.)

Smaller packages can be loaded through the forward door or through the paratroop doors at the rear when the tail is closed.

Think what this efficient cargo handling will do for the air shippers of tomorrow! Fast flying freight . . . safe, easy loading . . . costs comparable to surface transport at air express speeds.

All Fairchild Aircraft Division's production facilities are now building the "Packet" in quantities exclusively for the Army Air Force.

Additional and more detailed information can be obtained by writing Transport Sales Division, Fairchild Aircraft, Hagerstown, Maryland.

DOT U. S. WAR BONDS AND STAMPS

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ATA Move To End Air Delays Workable Here, Opposed Abroad

State Department experts see success of action to eliminate customs, visa, passport slowing of air travel in Western Hemisphere but wary of ancient obstacles in Europe, Asia.

By BLAINE STUBBLIFIELD

The Air Transport Association's campaign to remove passport, visa, and customs barriers which delay foreign-service air traffic, can succeed quickly in the Western Hemisphere but will meet with serious obstacles in other regions, in the opinion of State Department experts.

Security espionage between nations apparently will continue. Ancient suspicion and distrust will be hard to break down in Europe and Asia. Emigrant pressure toward the United States, due to war impoverished conditions acutely everywhere else, is tremendous. Illegal entries continue on a large scale.

Personal Problem—It would be difficult, authorities argue, to devise a universal travel card, proposed by ATA, that would have the personal documentary character of the present passport procedure. Even passports are widely

slated, and are simulated whole-sale. Very often physical examinations are required for protection against communicable disease. But, if any practical short cuts can be worked out, they would be welcomed officially.

Banders controls are mostly laws, not mere regulations. Any important changes will have to be made by Congress. Interdepartmental conflicts will have to be

Rainbows Ordered

Pan American World Airways has on order a fleet of Republic Aircraft Corp.'s high-speed turboprop transports, the manufacturer disclosed last week. Delivery of the first six is expected to start within 22 months. Cost is to be \$1,390,000 each.

Claimed to be the fastest commercial transport design, the Rainbow CARAVAN (News, Sept. 2) has a guaranteed cruising speed of 400-mph. and a high in excess of 450-mph. The 40-passenger cabin will be pressurized for high-altitude operation.

Additional details on the Rainbow, released by Republic, note its gross weight at 112,250-lbs., span, 129-ft., length, 90-ft. It is designed to carry a 10,000-lb. payload 4,150 miles. Despite its high speed, it is designed for a stalling speed of 90-mph.



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As a result of extensive flight tests it was found to be an invaluable piece of structural equipment for intercontinental flights.

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dealt with. The State Department handles passports; visas come under the Department of Justice and of State, customs are a Treasury responsibility.

Thus, even here at home, drastic revision of old institutions and habits would be necessary. Not the least obstacle would be the usual inertia of bureaucracy and job holders.

▶ **Vital Time**—All observers say that ATA has a good idea. Talk of

low fares on 10-hour trips to Europe, for example, is all right till the customer runs against the two-day to week-long red-tape of getting a passport and visa. Time lost preparing for air trips is proportionately far greater than for surface trips.

It was suggested, by an informed source, that persons who expect to fly cross-border get passports far in advance and hold them. Persons who have obtained one passport can put the next one in two or three days—in Washington, one day.

At present, U. S. citizens entering Canada need only proof of citizenship, same for Canadians coming here, but they need passports for more than 29 days. U. S. tourists need only a card to enter Mexico, but they meet complications, later. Emigrants and business travelers need passports. Passports are required of Mexicans entering the U. S., but total obligations of travel between the two countries are about even. Frontier dwellers on both sides can cross on border cards.

▶ **Hope Here**—ATA hopes, as a first step, that card travel can be established between here and Mexico and Canada. Immigration

pressures within this hemisphere are very light, espionage a almost non-existent. Freedom of movement, State Department officials admit, should be attainable.

Loosening of travel and customs barriers throughout the world would be a major step toward international cooperation, and Congress undoubtedly will make initial moves in that direction.

ATA hopes that steamship, rail and bus operators, all of whom would benefit, will join its campaign. A joint committee to study the problem will be named in the next few weeks.

Two U. S. Lines Start London Trips

Pan American, American Airlines Overseas open operations. TWA may not begin for month.

Two of the three U. S. flag lines awarded routes across the North Atlantic last summer by the Civil Aeronautics Board, are starting service to London.

Pan American Airways re-established its North Atlantic service between New York and London on Saturday, Oct. 20, and American Airlines Overseas is to begin operations Tuesday, Oct. 23.

▶ **Service Flights**—Transcontinental & Western Air, the third line, has not completed survey flights over its European routes, and may not begin scheduled trans-Atlantic commercial operation for another month.

Both American Overseas, formerly American Export, and Pan American are using C-54Es. Pan American expects flying time from New York to London to be about 13 hours.

Pan American says it permitted two round trips between the U. S. and United Kingdom under U. S.-British agreement, and its new airplane service therefore will be limited to this number. Hope was expressed that the number may be increased soon and the State Department already has indicated this will happen (AVIATION NEWS, Oct. 15).

▶ **Cost Hopes**—Fares will be \$275 one way and \$495 round trip. This compares with pre-war flying cost fares of \$375 one way and \$675 round trip. Pan American hinted that rates may be lowered if frequencies increase.

Meanwhile, the line will continue to operate flying boats on twice-weekly schedules to Lisbon.



STARTING LINE

Beginning with V-J Day and continuing through the plant clearance and inventory period, the Beech plant has lacked the sounds of production.

Now the sounds of rivet guns, presses, drop hammers, and compressors again are heard. The production of peacetime airplanes has begun at one end of the plant while the war surplus clearance goes on at the other.

The modest beginning of a production line shown above is like the first sign of Spring. It forecasts the future. Soon there will be several production lines operating, with new peacetime

BECHCRAFTS leaving them for all parts of the world, to contribute to the reconstruction efforts of all nations.

BECHCRAFT invites inquiries about peacetime airplanes that will render the same class of ruggedness, dependability, and efficiency that has become the world-wide reputation of the BECHCRAFTS built for the war. All types of BECHCRAFT products will be designed and built in a way that will enhance BECHCRAFTS' priceless reputation for quality products.

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FOR TOMORROW'S SKIES

Rapid forward strides in the development and design of Sikorsky helicopters are being made every day. Three types have been in quantity production, the Army R-4, R-5 and R-6. Sikorsky helicopters were the only ones in active military service.

Now Sikorsky is concentrating as never, more powerful designs. Needed, as an essential part of the important and extremely interesting work, are structural engineers, weight engineers, layout and detail draftsmen.

WRITE TO: PERSONNEL DEPARTMENT, SIKORSKY AIRCRAFT
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with fares reduced Oct. 30 to the pre-war figure of \$300 flying time and passenger fares between New York and London are to be cut further by Nov. 15, when additional C-54s are expected to be available.

Pan American notified CAB last week that it intended to serve London by landing at Hurn and/or Bovingdon. The former is 158 miles from London and probably would entail a shuttle connection by British Overseas Airways, Bovingdon is 18 miles from London.

American Airlines System's trans-Atlantic operation will start with three round trips each week between New York and London. One of these round trips will serve Boston. Eastbound flights will leave New York Tuesday, Thursday and Saturday, while the return flights will leave London on Wednesday, Friday and Sunday. The Tuesday eastbound and Wednesday westbound flight will stop at Boston. All flights will be made by way of Newfoundland and Rye.

The first American flight will leave the International Terminal at LaGuardia Field at 3 p.m. Tuesday. The equipment used will be exclusively DC-4s, counterpart of the Army C-54E. American will fly a crew of seven: captain, first

officer, navigator, radio operator, flight engineer, purser and stewardess.

Ralph Darnon, president of AA, and Harold B. Harris, vice-president and general manager of American Export Airlines, discussed the plans for the transatlantic operation with members of the press last week in an aerial press conference held over New York City in the first DC-4 to be certificated for civilian transport use.

CAB Tightens Liaison As Lines Speed Tempo

The Civil Aeronautics Board viewing the increasing tempo of the air transport industry, has tightened its liaison with the air carriers "on matters not otherwise reported to the Board through established channels."

Charles O. Cary, executive assistant since July, 1944, to Chair-



man L. Welch Pagno, has been placed in a new job as Special Assistant to the Board to carry out the work. The CAB announcement says he will confer with airline personnel on economic, labor, operational and developmental problems. The Board thus expects to gain firsthand, prompt information on industry problems of a day-to-day as well as a policy nature.

Successor — Miss Marian L. Newman will succeed Cary in



Pagno's office, where she has been the Chairman's secretary since March, 1942. She has been with the Board since its organization in August, 1938, and for three and a half years was its recording secretary.

Name Change Vote

The change in name of American Export Airlines to American Airlines Overseas, Inc., recently approved by American Airlines' board of directors was up for stockholder ratification late last week. Company officials said approval was a foregone conclusion.

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RADIO AND OTHER ELECTRONIC EQUIPMENT FOR A WORLD ON WINGS

Marshall and the Role of Air Power

GENERAL MARSHALL'S brilliant 72,000 word report on World War II will take its place as a great document of history. Because of the general's unparalleled prestige in Capitol Hill and with the public its influence will be considerable. Yet, except for one extended passage on the strategic and tactical bombardment of Germany, headed "Victory In the Air," and a few scattered paragraphs, the report virtually ignores the decisive role of air power in the victory of allied arms over Germany and Japan.

This is regrettable. Never has it been more urgent for Congress to understand fully the role and value of air power, and the necessity to keep it with continued aeronautical research, development, and production.

A possible but inadequate reason for the omission may have been Marshall's feeling that General Arnold is making a separate report to Secretary Patterson covering the achievements of the Army Air Forces. However, in any over-all report on the strategy of victory and the progress of the various campaigns, more specific recognition should have been made by the Chief of Staff concerning the branch of the triple-headed U. S. Army which, with Naval air, knocked Japan out of the war without a costly invasion of the home soil, the threat of which caused Italy to capitulate, and which was more than any other single factor acknowledged to be responsible for the final collapse of Germany.

ON THE OTHER HAND, it should not be inferred that General Marshall was actually anti-air force in his magnificent job of re-arming the country for the coming conflict, which will be his crowning monument as Army Chief of Staff before and through World War II. He it was who rescued the late Lt. Gen. Frank M. Andrews, one of this country's original air pioneers, from oblivion, made him his G-3 in charge of training and operations, gave him the vital Caribbean and Canal Zone defense command, then at a crucial time the important Middle East Command. This in turn was but preparation for the big job of commanding general of the entire European operations, land and air, in the early part of which he was lost in a crash during a routine air inspection flight. If this had not happened, it is likely that

the commanding general of the allied forces which brought Germany to defeat would have been definitively an air officer.

While all this was going on, General Marshall was working at Headquarters to give General Arnold every possible assistance in his task of building up a powerful striking air force from pitifully small beginnings. With General Arnold's elevation to membership in the Joint (USA) and Combined (Anglo-American) Chiefs of Staff, General Marshall consistently backed his policies at such critical points, for example, as the Casablanca decision for the AAF to continue bombing, and the capture of the Marianas for what proved to be the decisive B-29 operations.

ALTHOUGH THIS IS TRUE, and wholly to the good, but the fact remains—and Congress should note and ponder—that General Marshall's report reflects the viewpoint of an able but conservative Army officer. Ground strategy and tactics, logistics, the capture of positions, artillery, tanks are the all-important considerations. Air activities are but preliminary or at best auxiliary operations. And even on this level, admitting the fact that the detailed crash the public in General Arnold's previous and forthcoming reports, there are notable omissions as to the genuinely decisive part played by tactical air power itself in connection with certain critical points of the various campaigns.

These might well have been covered at least in a sentence or two to show that air's decisive part was realized, permitting the details to follow in the report of the commanding general of the Army Air Forces. Tactical air power's unique role in teaming with General Patton in his lightning dash across France is one example; air's part in the "bottle of the bulge" is another.

In the light of the atomic bomb and fantastic air weapons in being or under development, air's future role in possible offense and defense will be greater than ever. The single department of defense, with co-equal air, should certainly get a better hearing than it has had to date. It is significant that on the Army side the highly successful team of Ike Eisenhower and Tocco Spaatz, firmly knit in Africa and Europe, will shortly be functioning in Washington.

ROBERT H. WOOD



OFFICIAL U. S. NAVY PHOTO

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More than one sailor has said, "It's a helluva place to fight a war!"

That's a miracle of understatement when you know the Pacific as well as the U. S. Navy knows it.

They know how many thousands of miles you have to go before you reach the fighting fronts.

They know there's almost constant rain and bad weather to hamper operations after you get there.

And they know there are no good ports!

Think of the thousands of ships, and the millions of tons of supplies it takes to keep our fighting forces moving toward Japan.

Imagine, if you can, the problems of handling these ships and supplies with no port facilities.

There are no giant cargo cranes... no miles of docks and warehouses... nothing but beaches, and barren beaches, and a refusal to call any job impossible.

Remember, too:

It takes 3 ships to do the supply job in the Pacific that 1 ship can do in the Atlantic.

It takes 6 to 11 tons of supplies to get a ton on the Pacific beaches, and another ton per month to keep him supplied.

It takes a supply vessel, under ideal

conditions, half a year to make one round trip.

Add up those facts, multiply by the number of sailors, soldiers, and marines for whom the Navy is responsible.

Maybe you'll begin to realize what "no ports" can mean in the rough, tough waters of the Pacific.

Maybe you'll see that we have two reasons to be proud of the U. S. Navy. First, the way they've made the enemy's ships.

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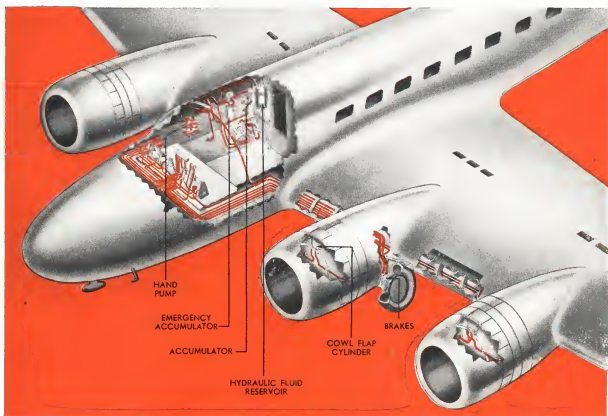


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